

FIG. 1

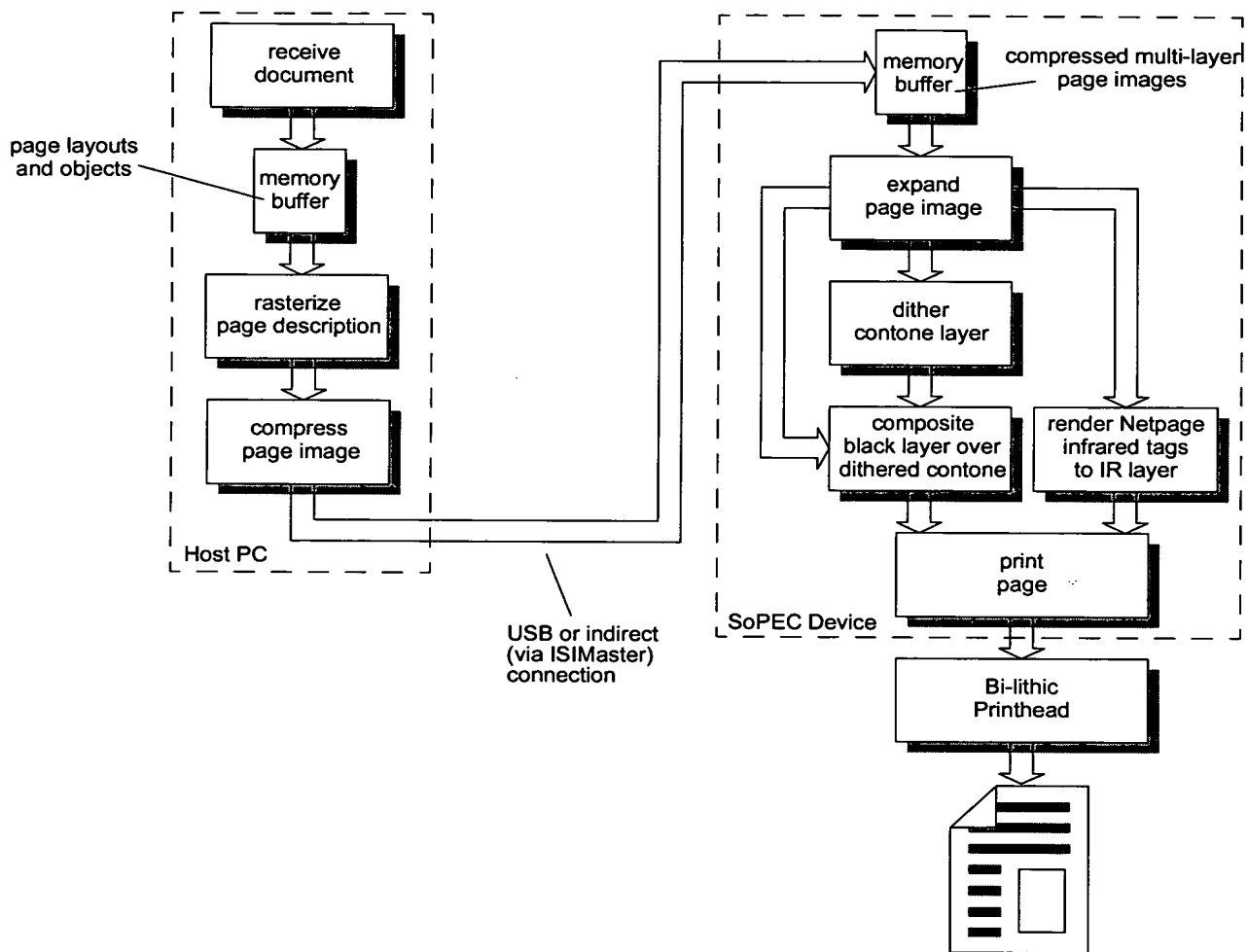
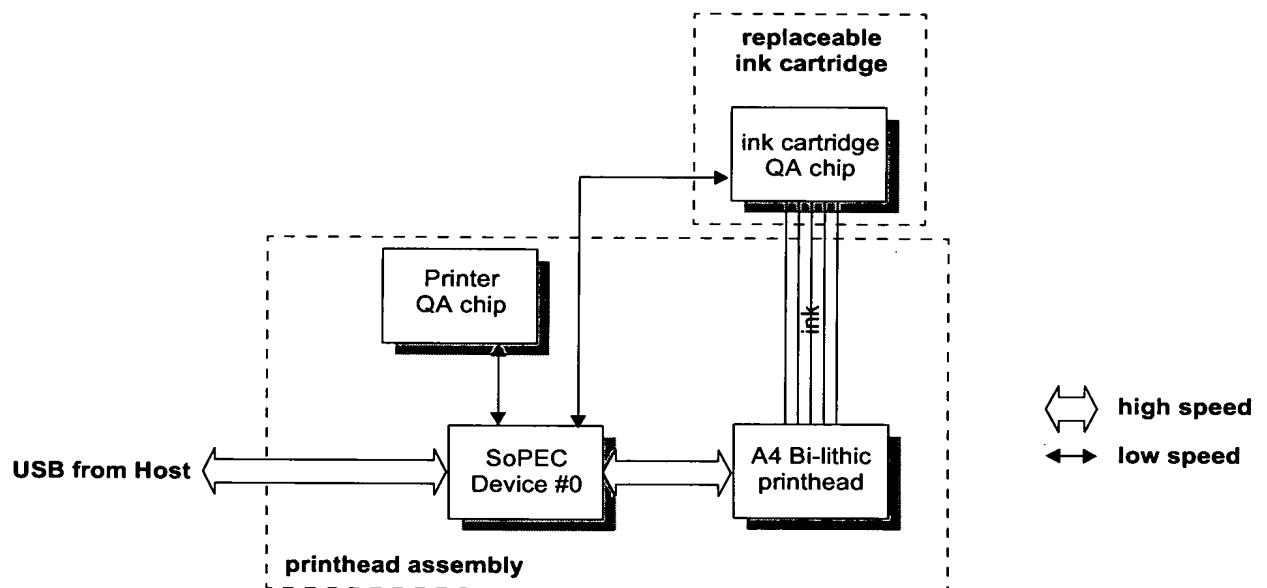


FIG. 2

*FIG. 3*

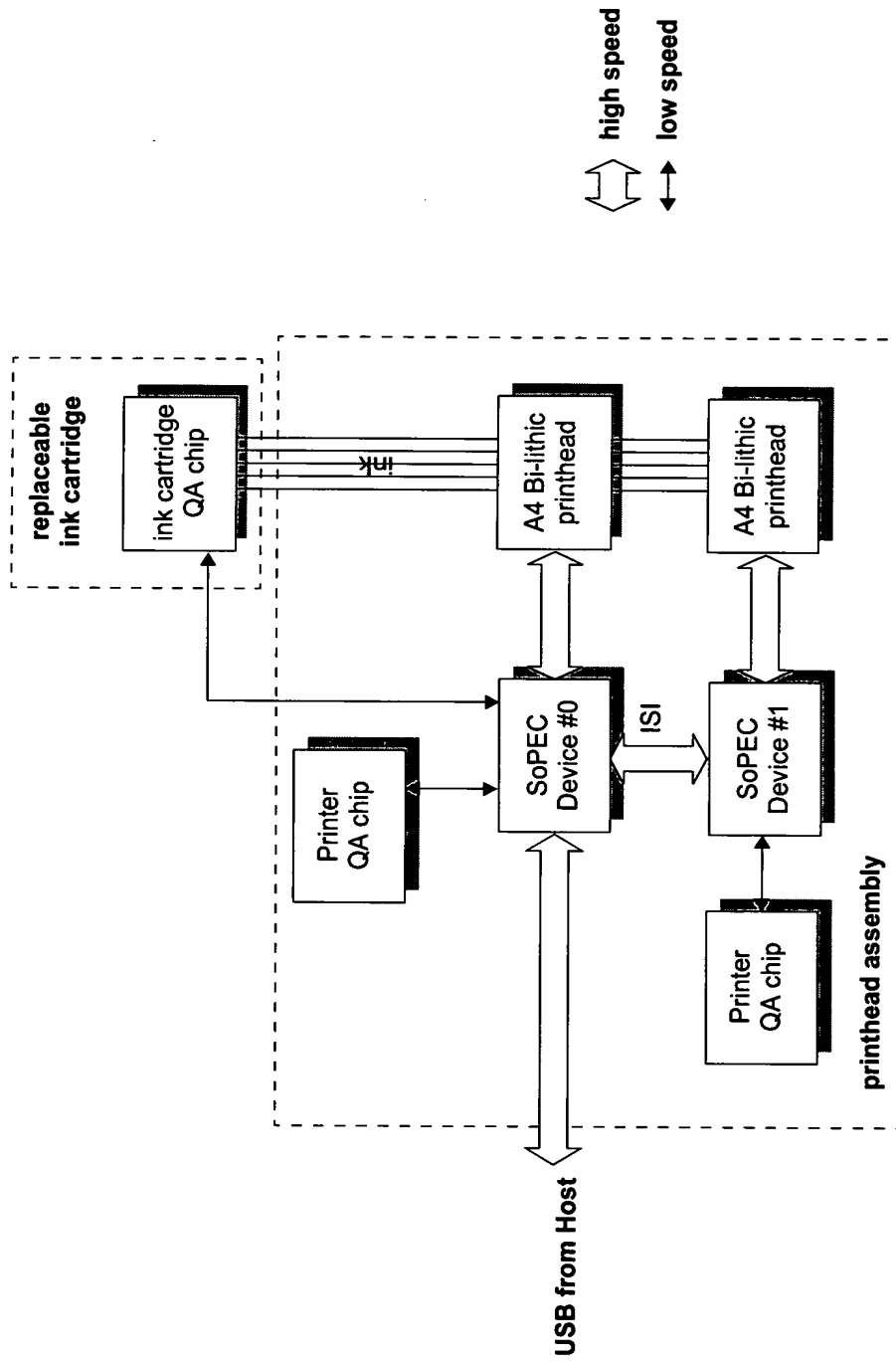


FIG. 4

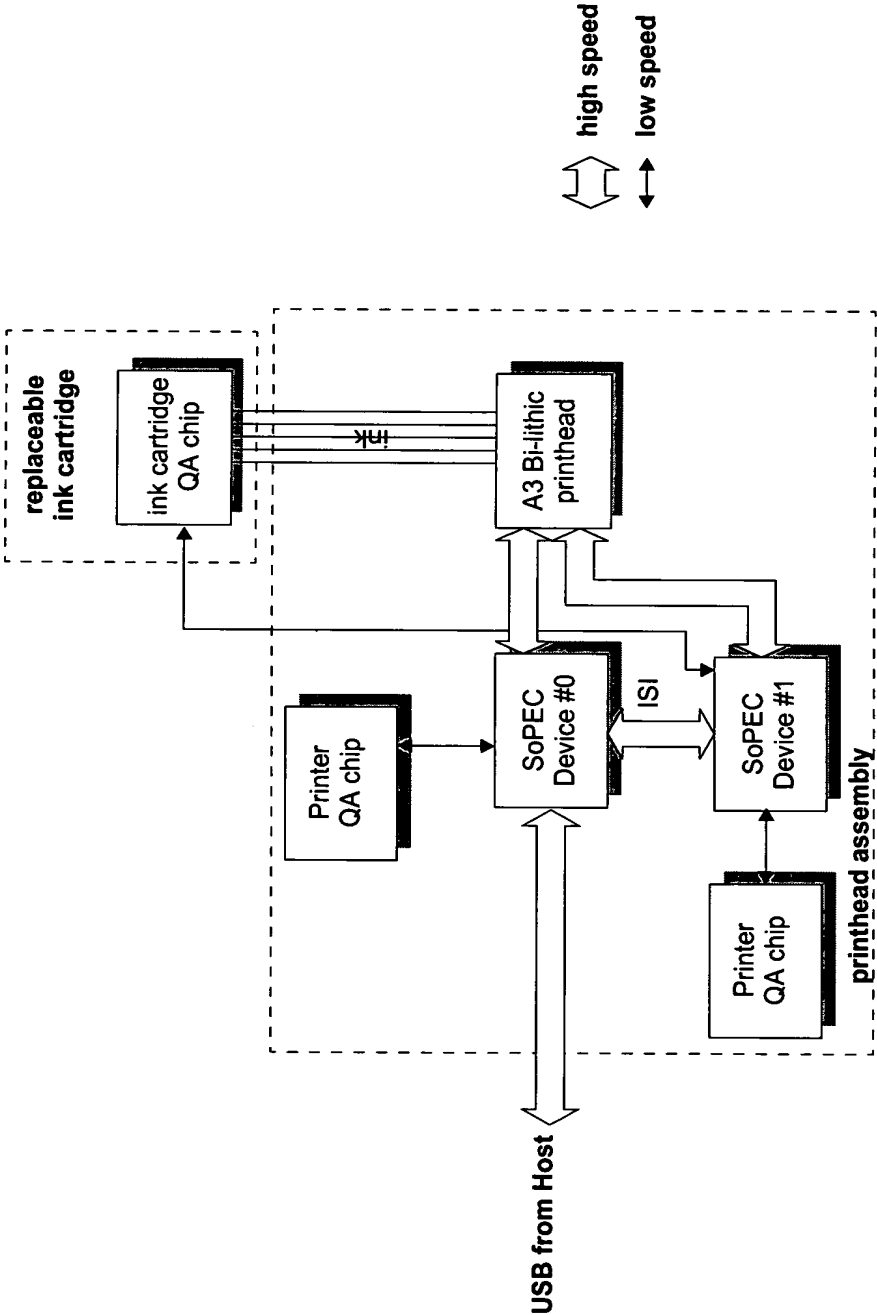


FIG. 5

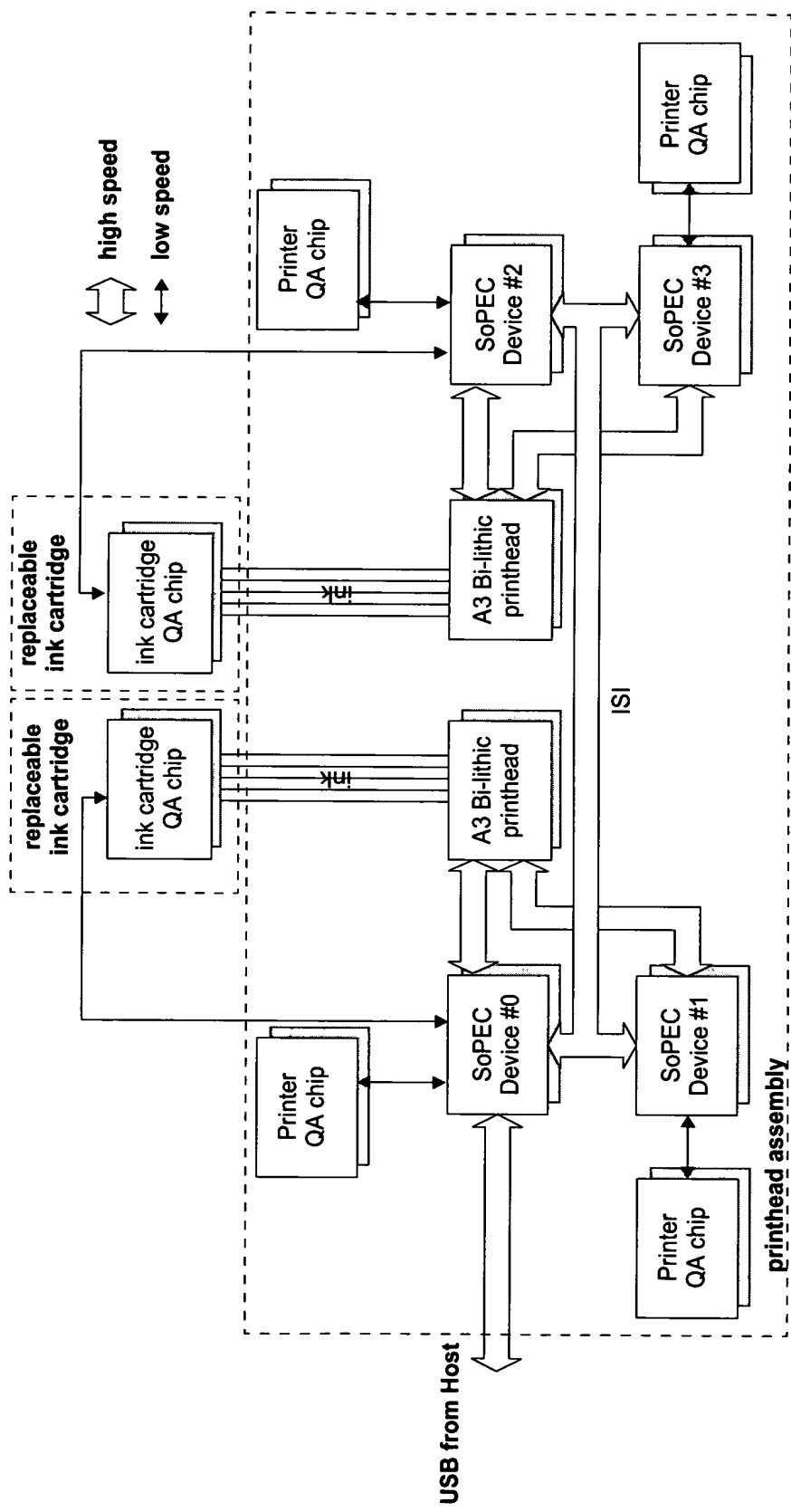


FIG. 6

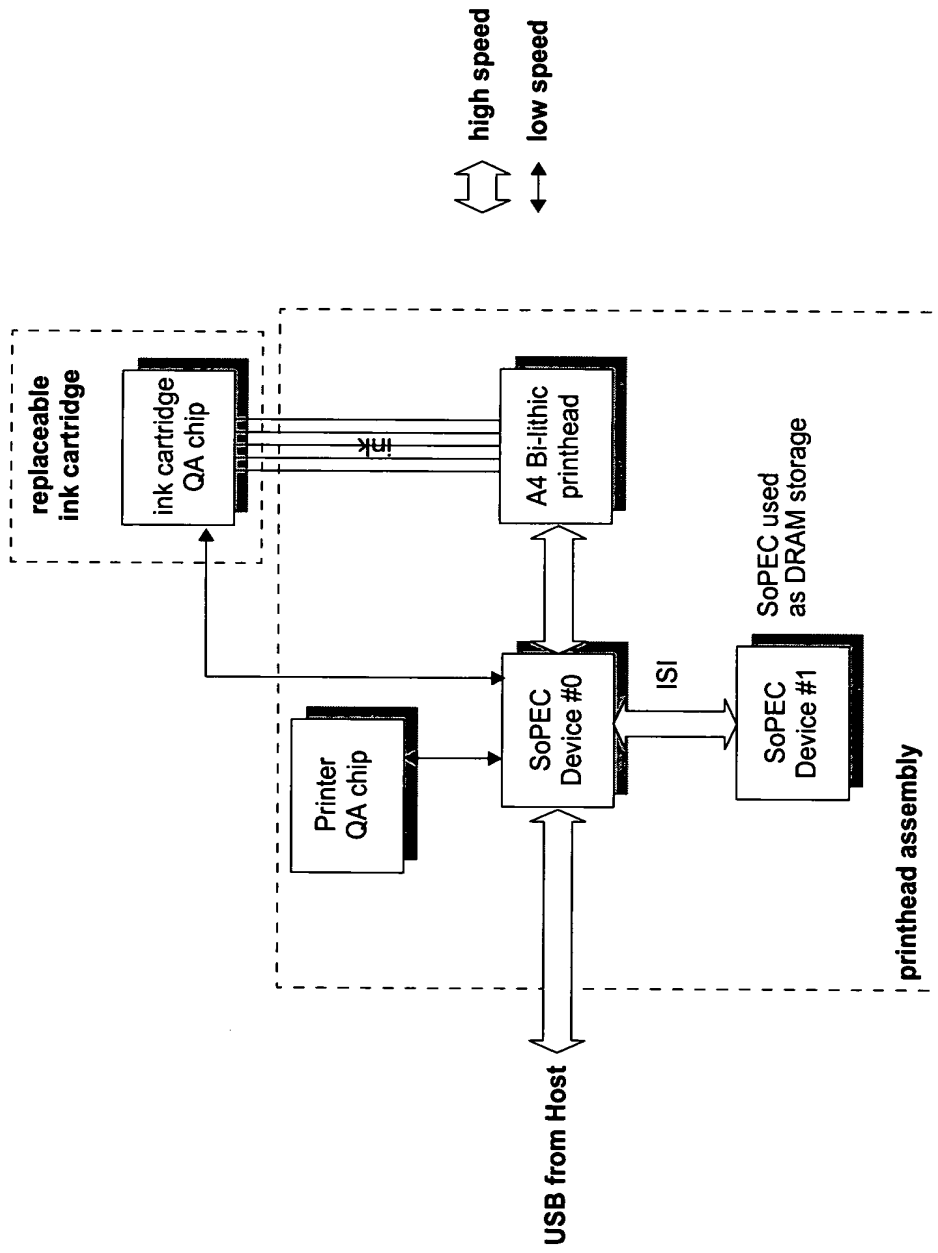


FIG. 7

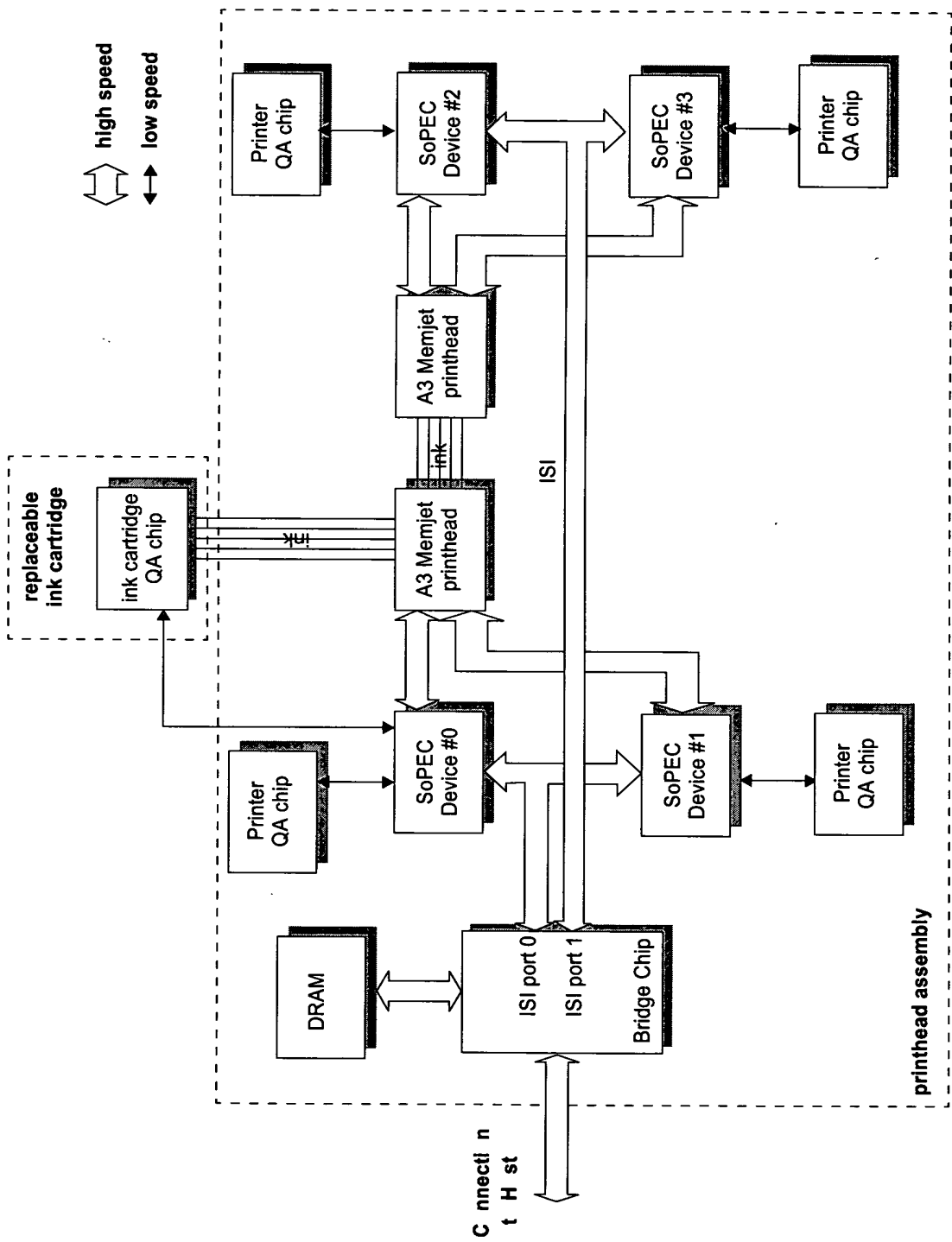


FIG. 8



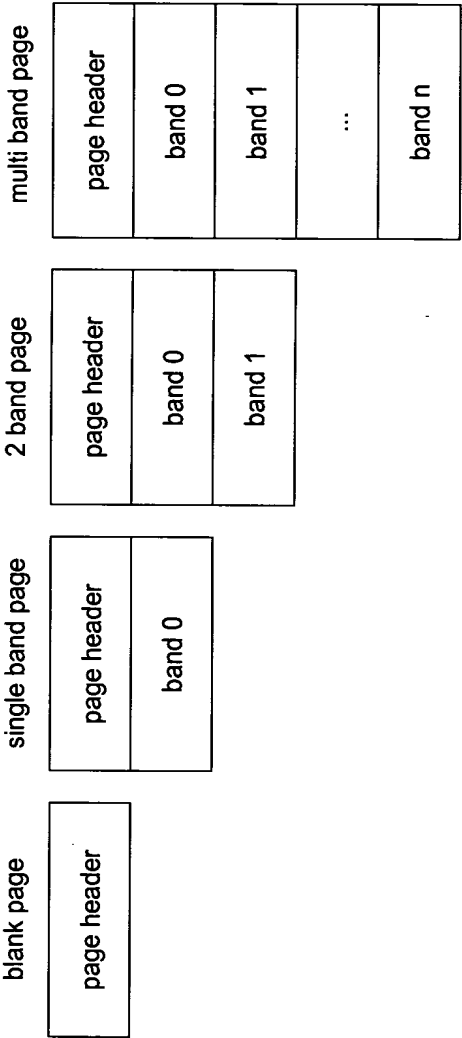


FIG. 9

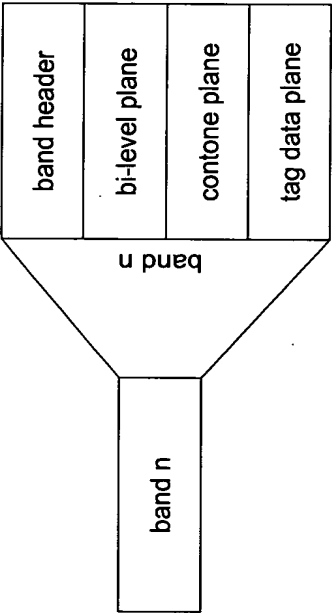


FIG. 10

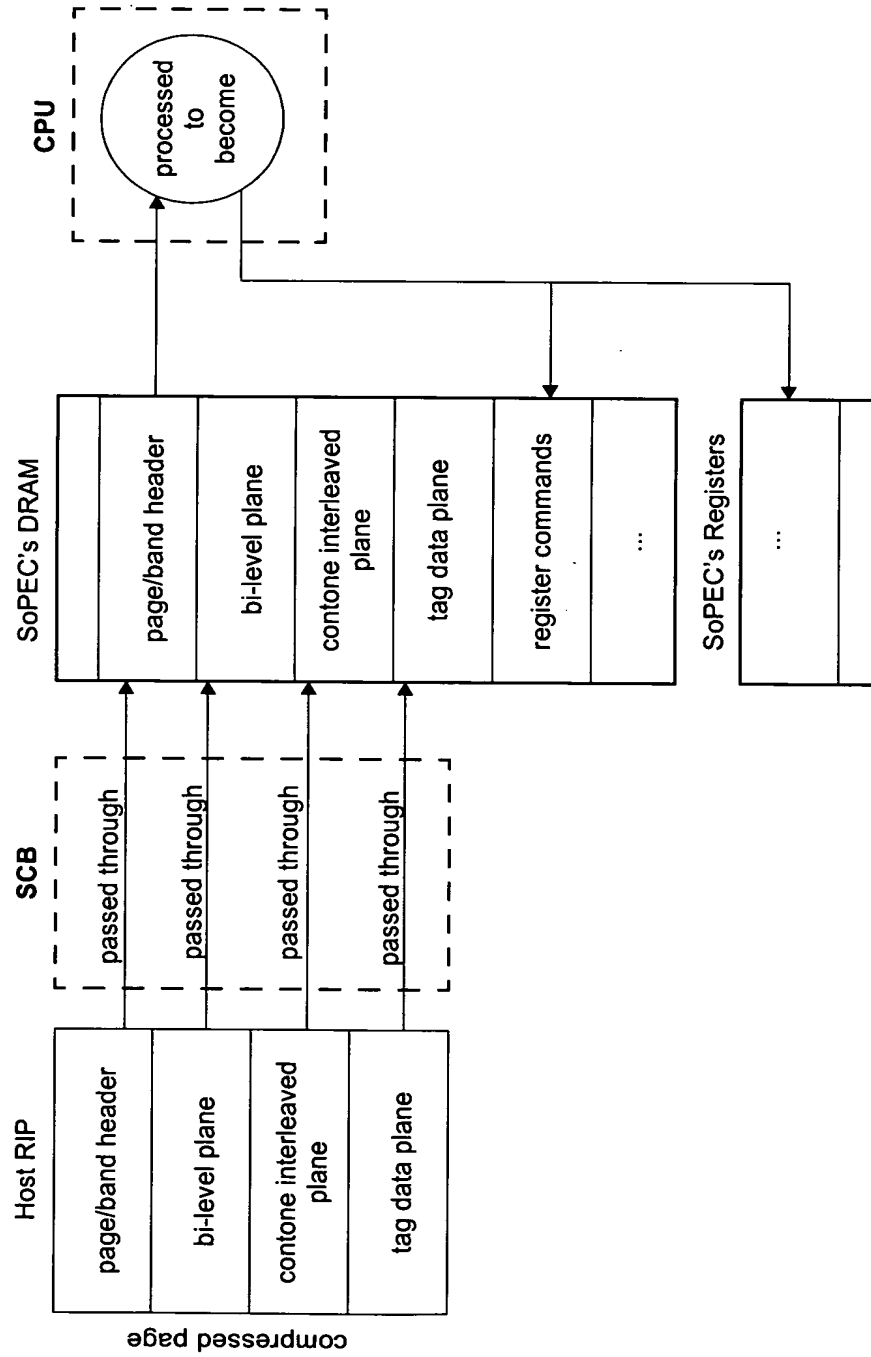
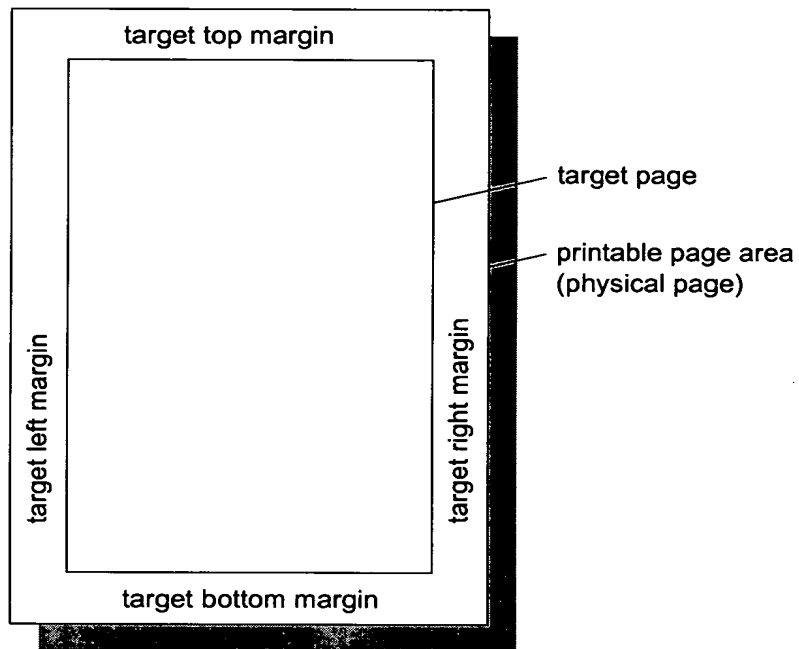


FIG. 11



*FIG. 12*

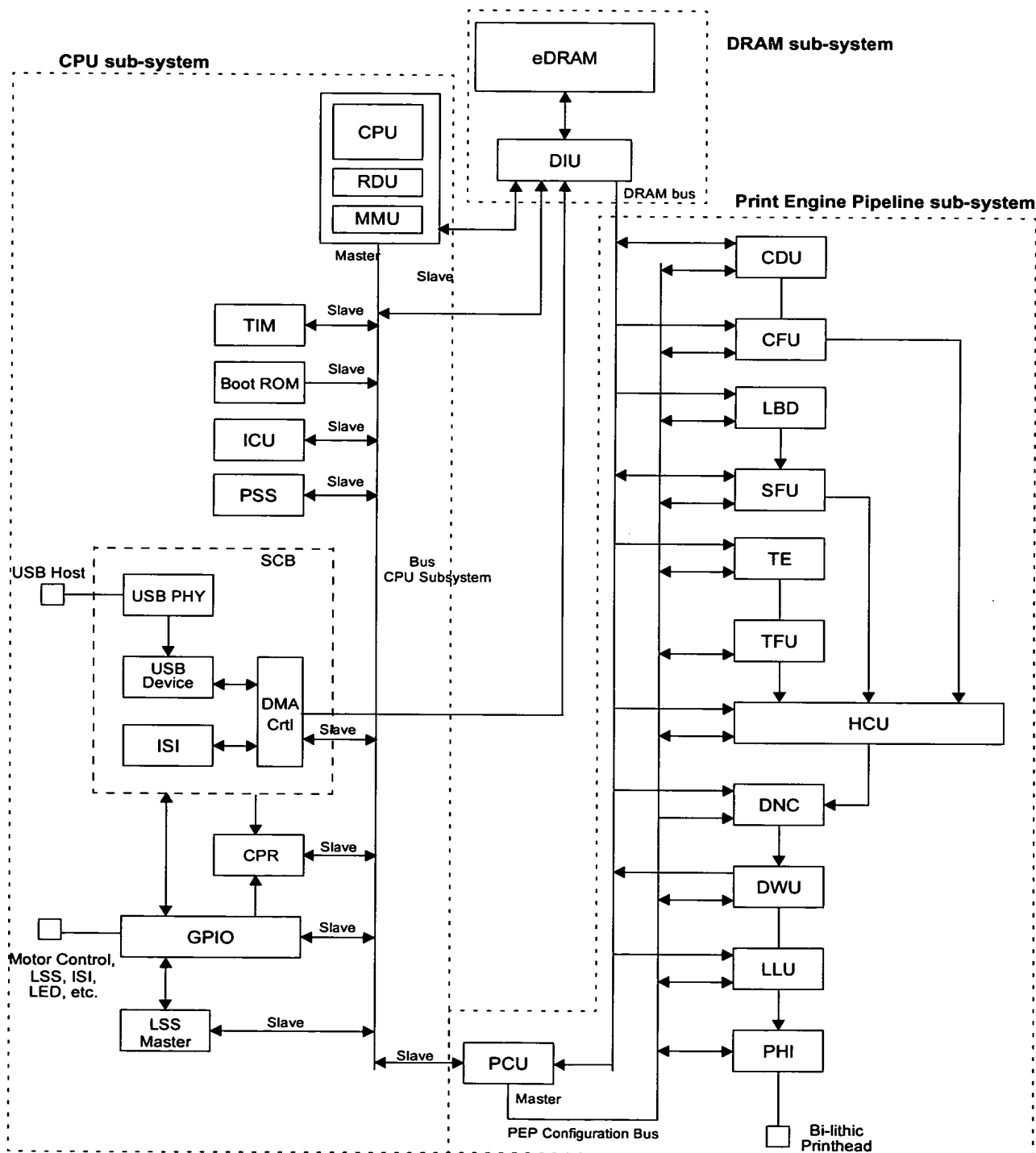


FIG. 13

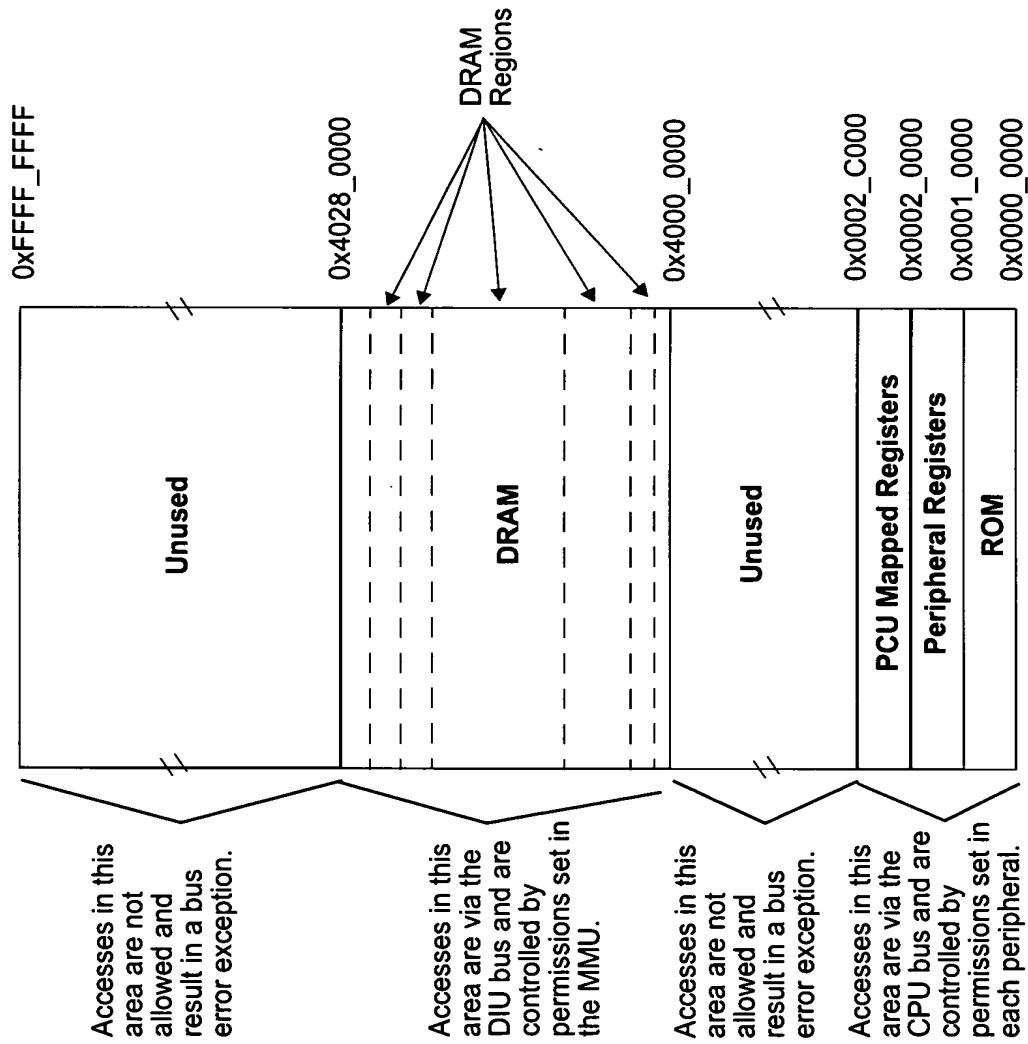


FIG. 14

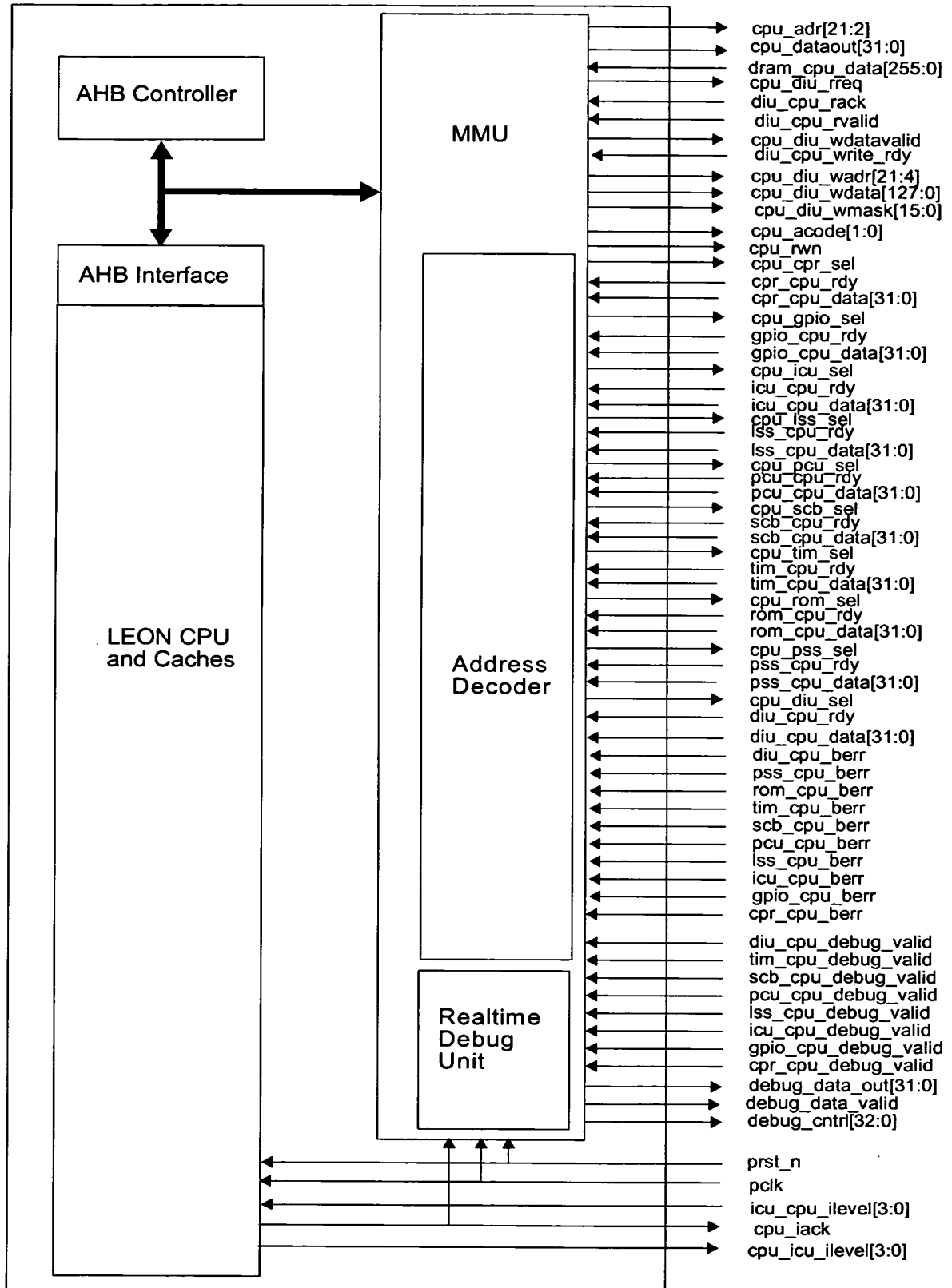


FIG. 15

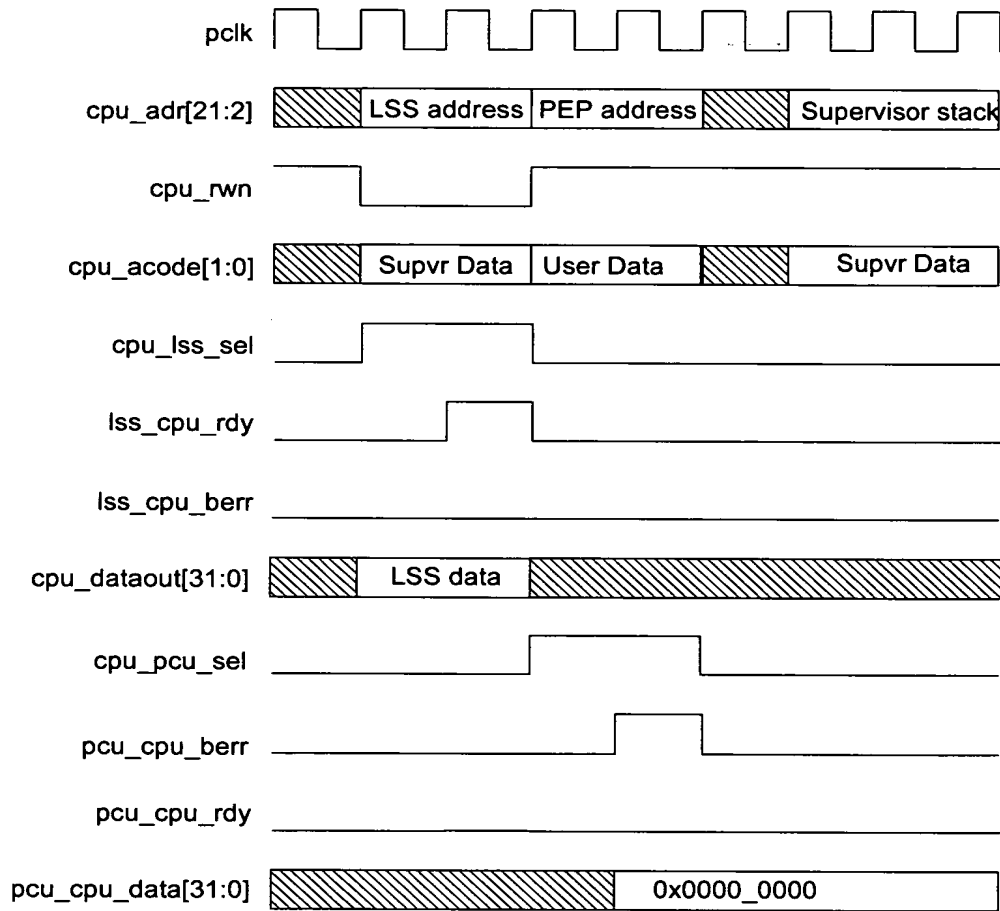


FIG. 16

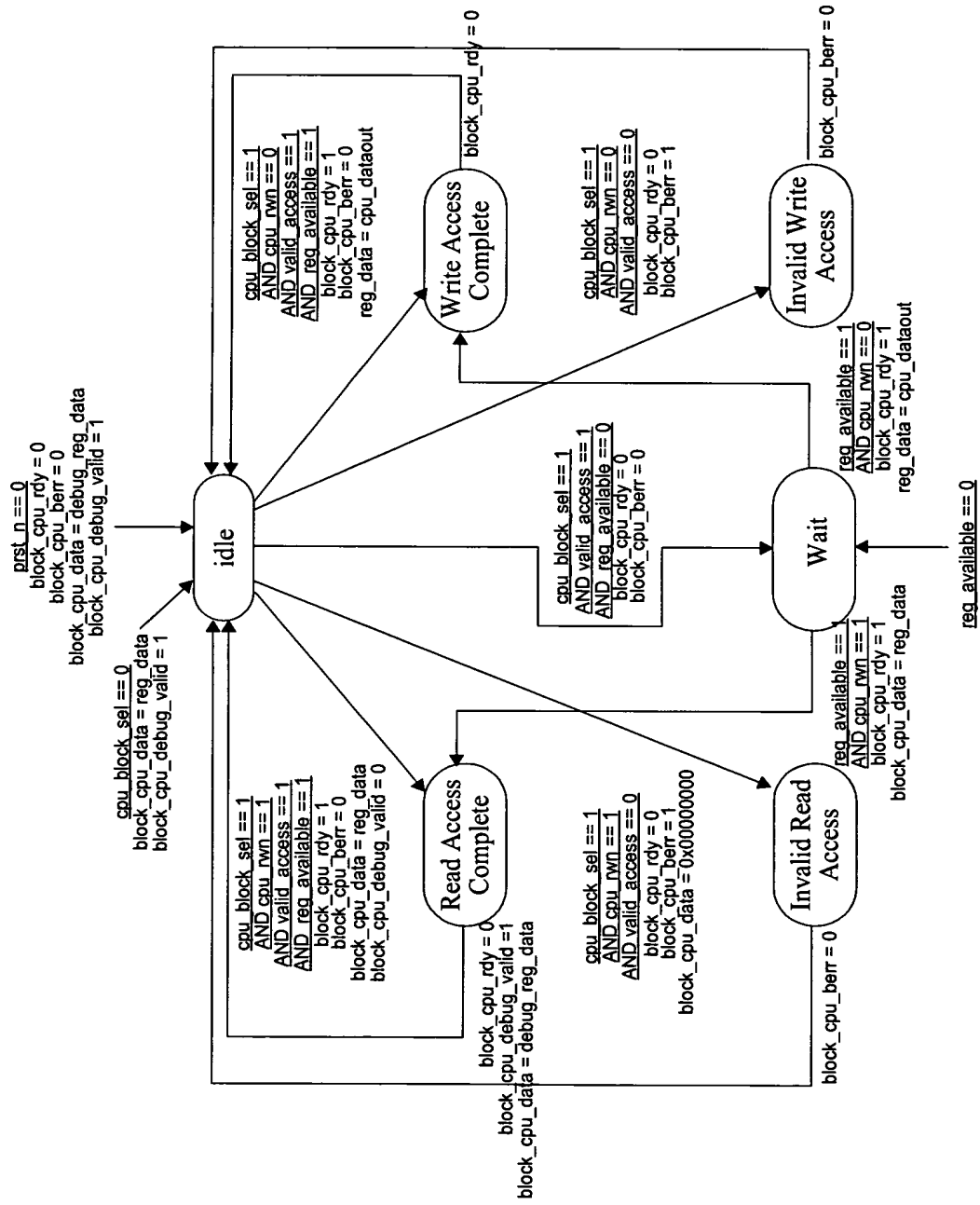


FIG. 17



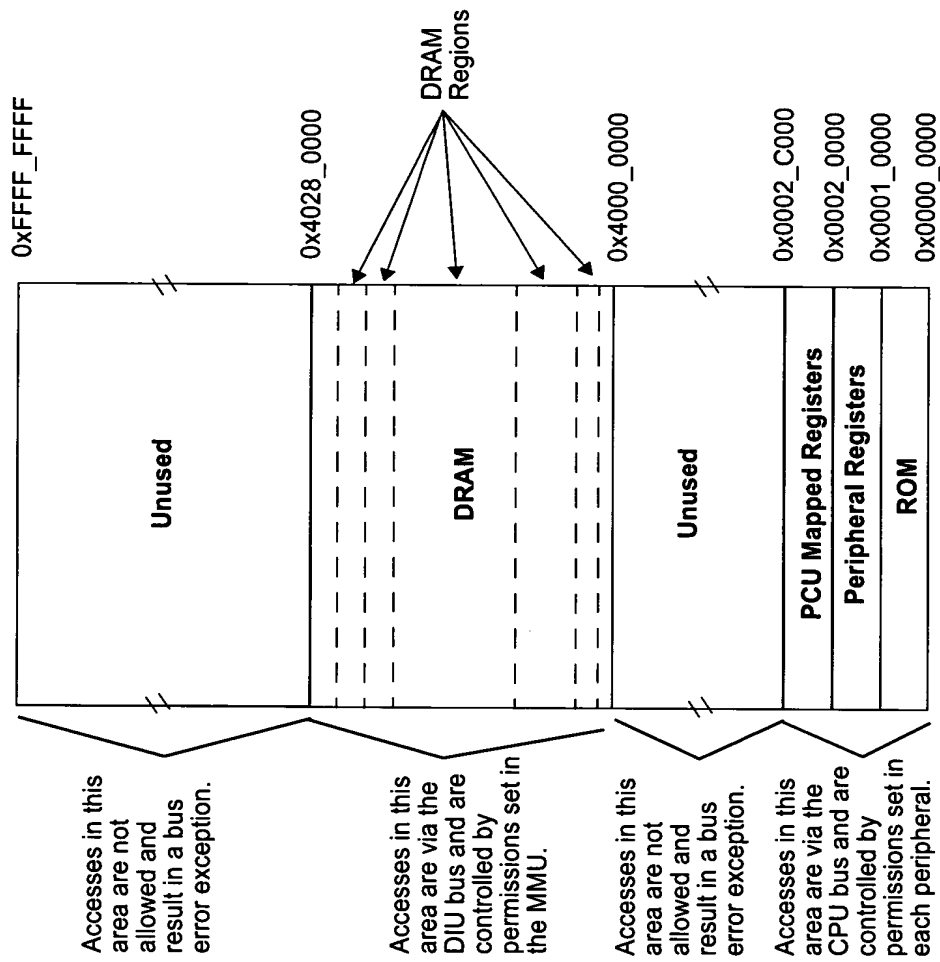


FIG. 18

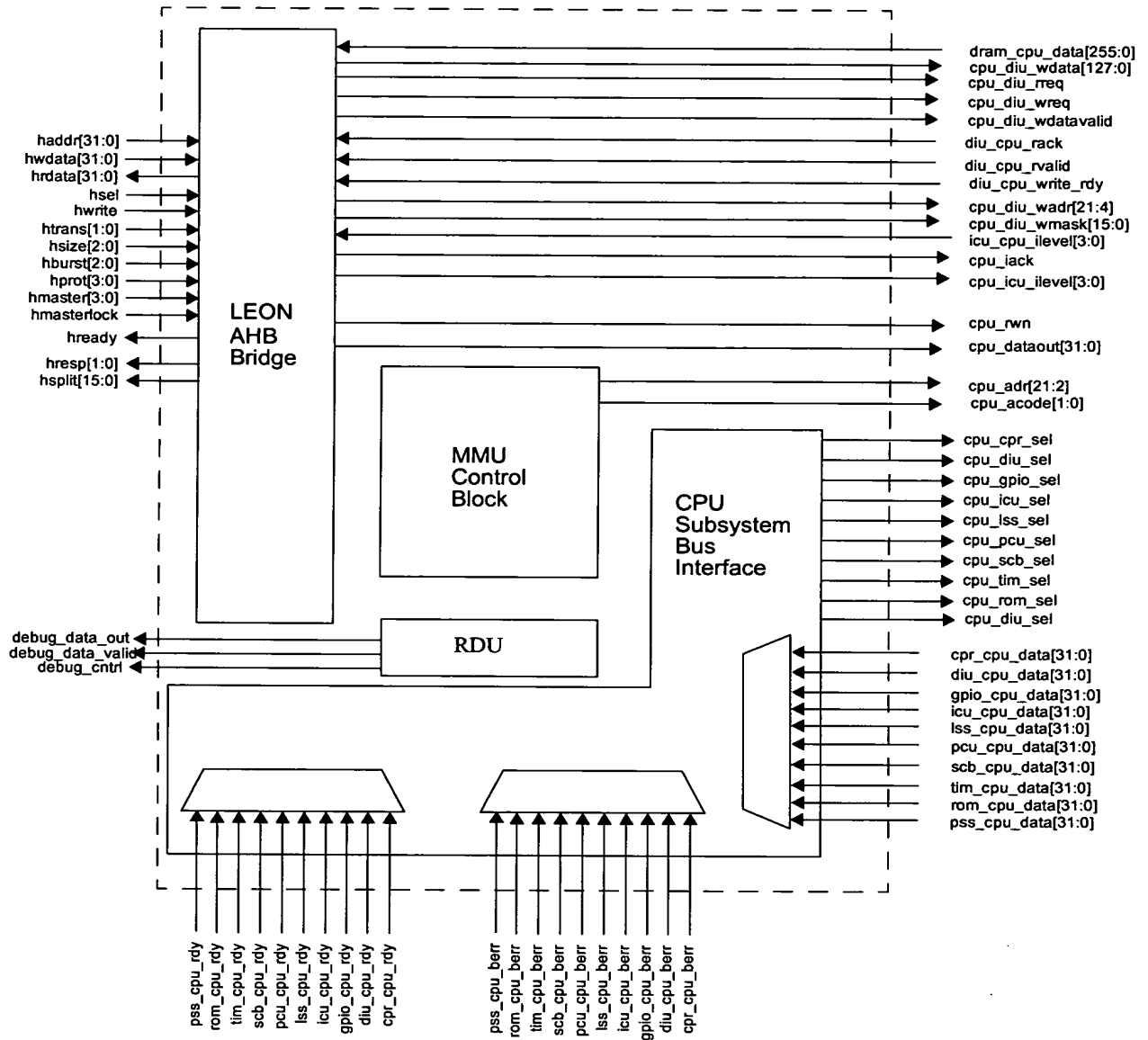


FIG. 19

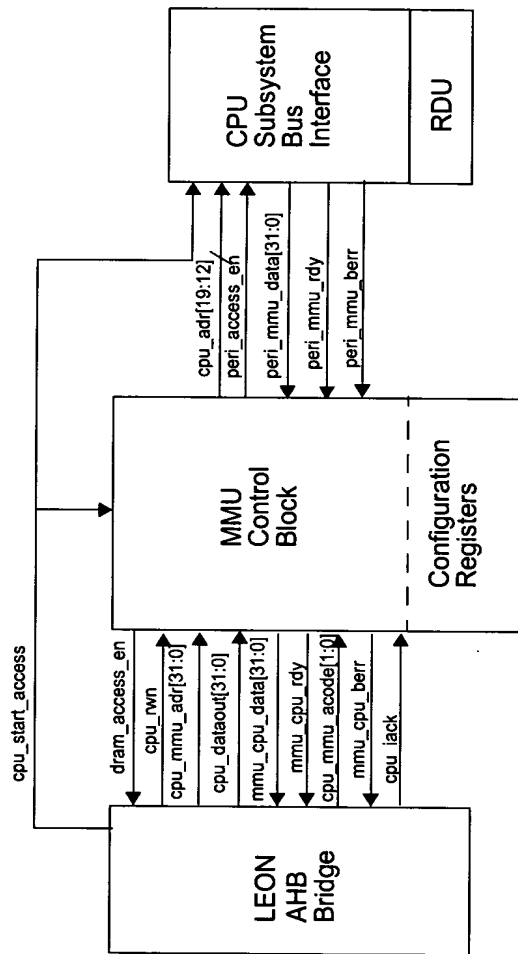


FIG. 20

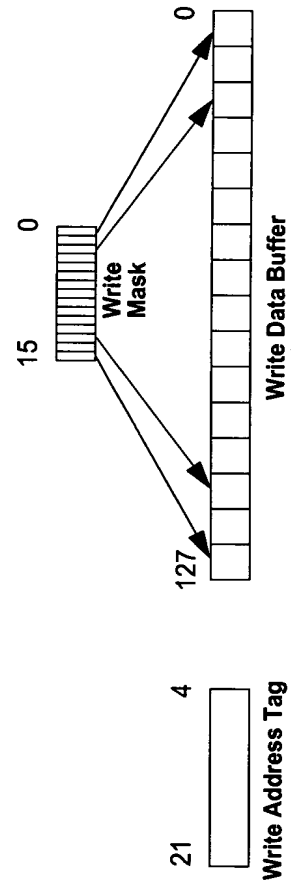


FIG. 21

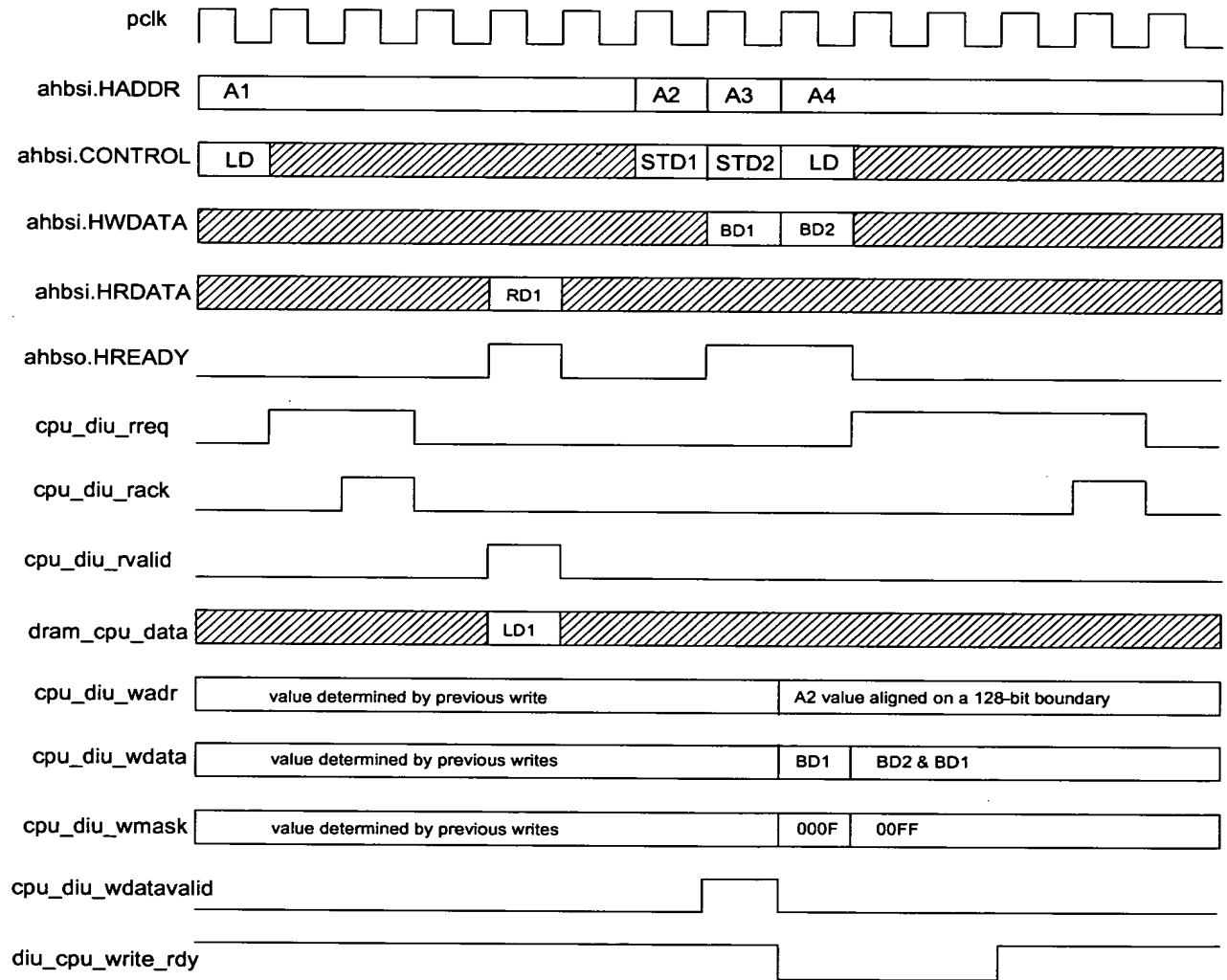


FIG. 22

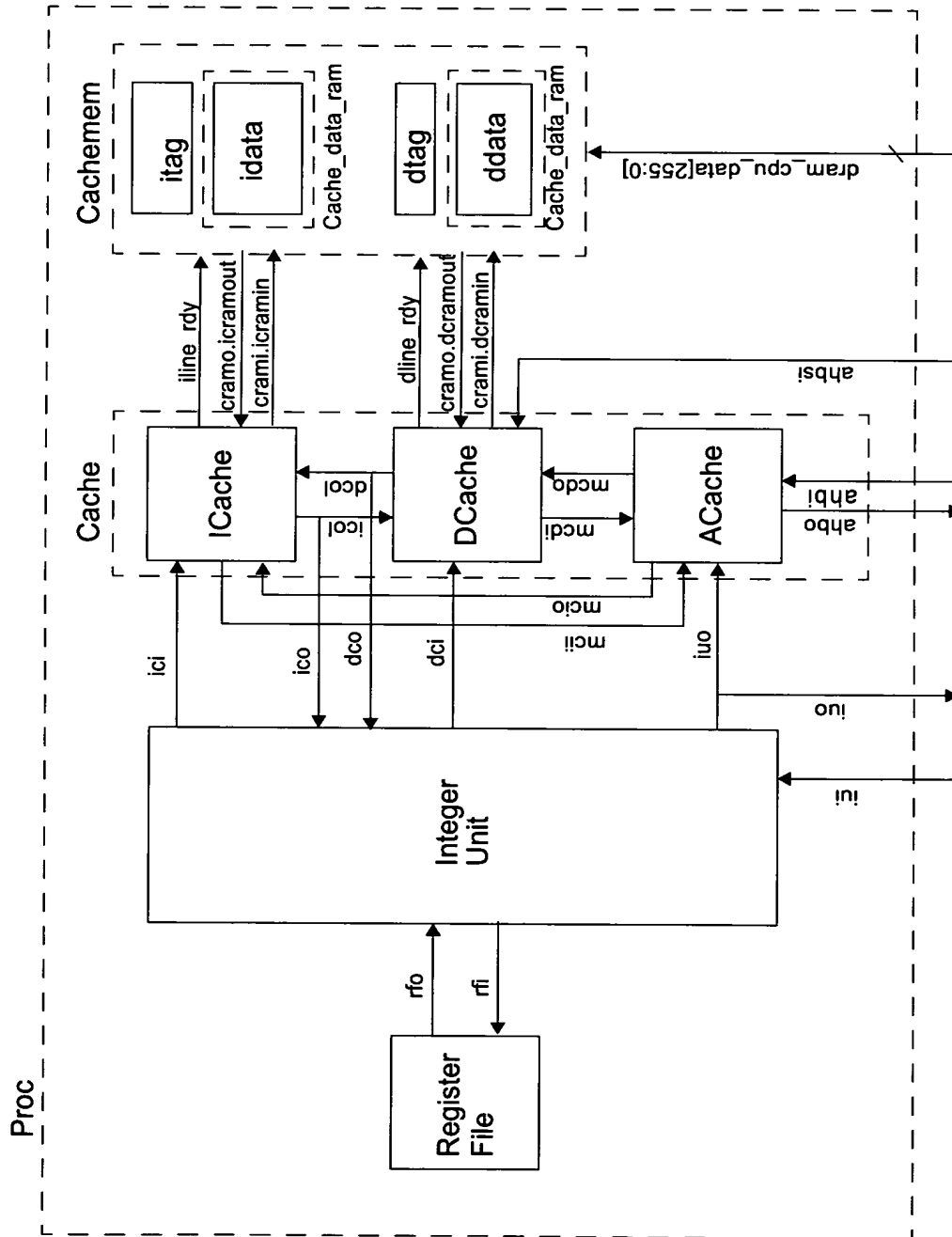


FIG. 23

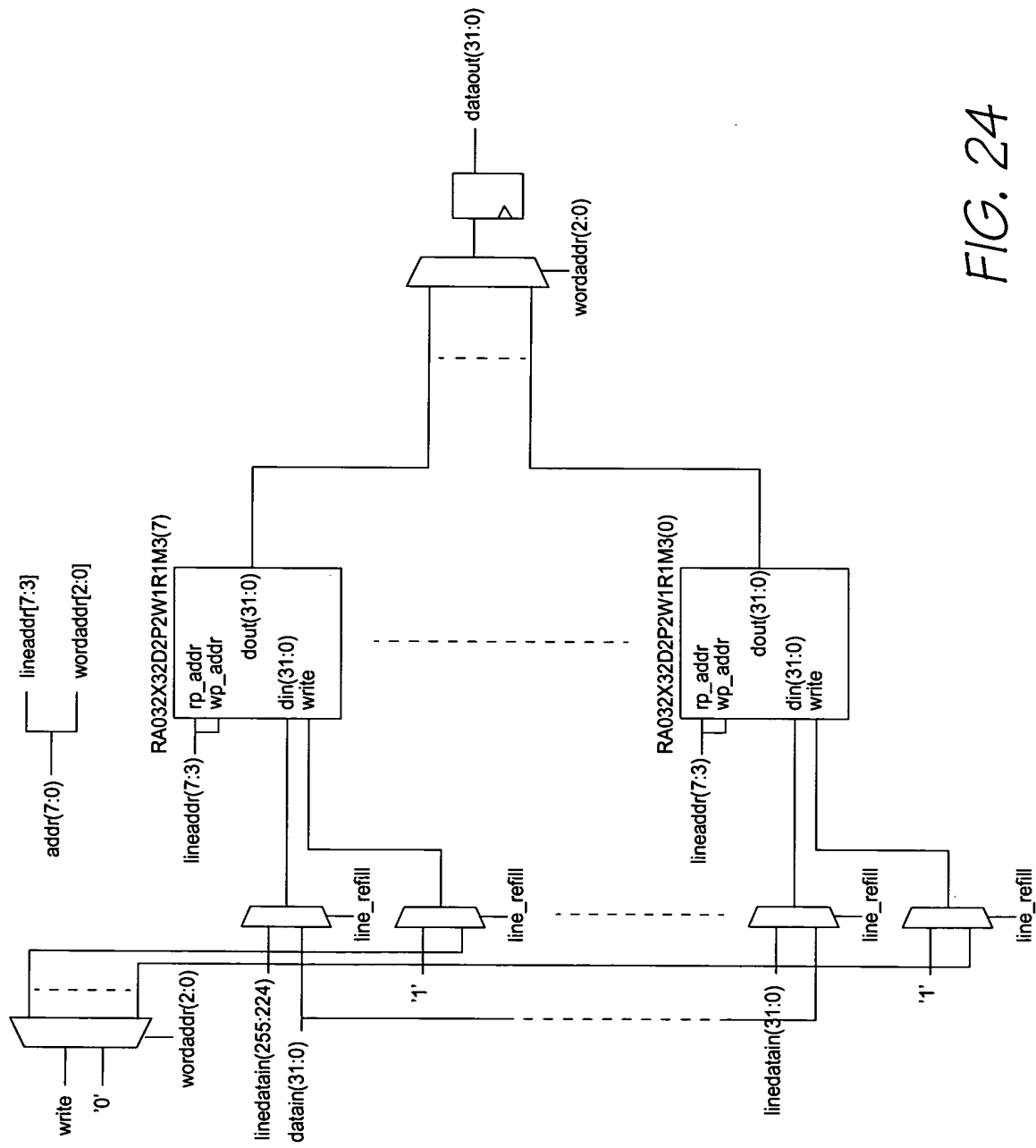


FIG. 24



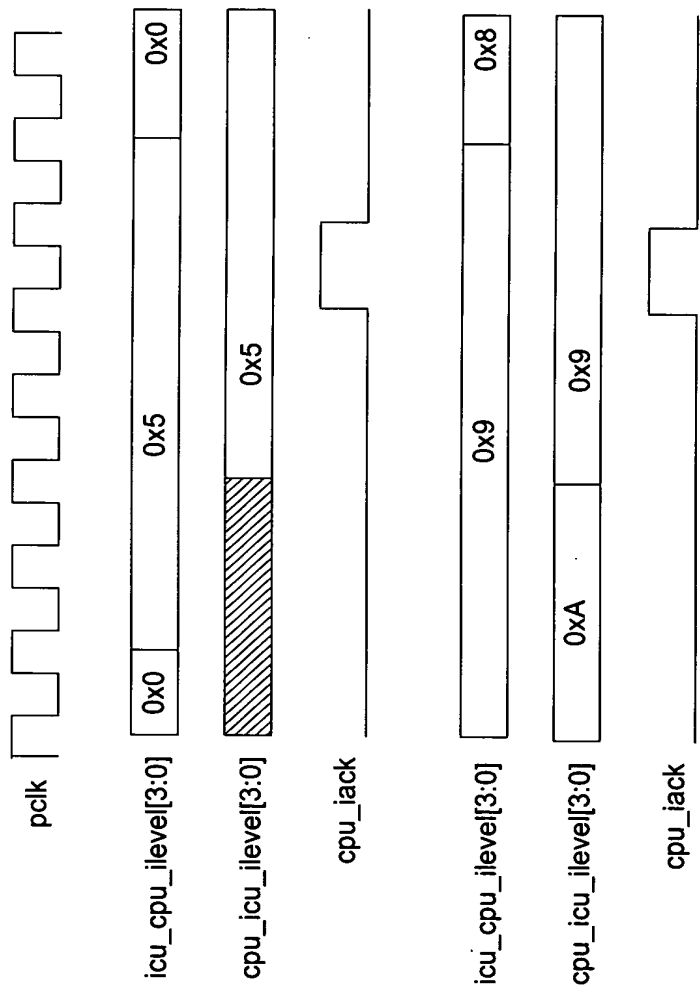


FIG. 26



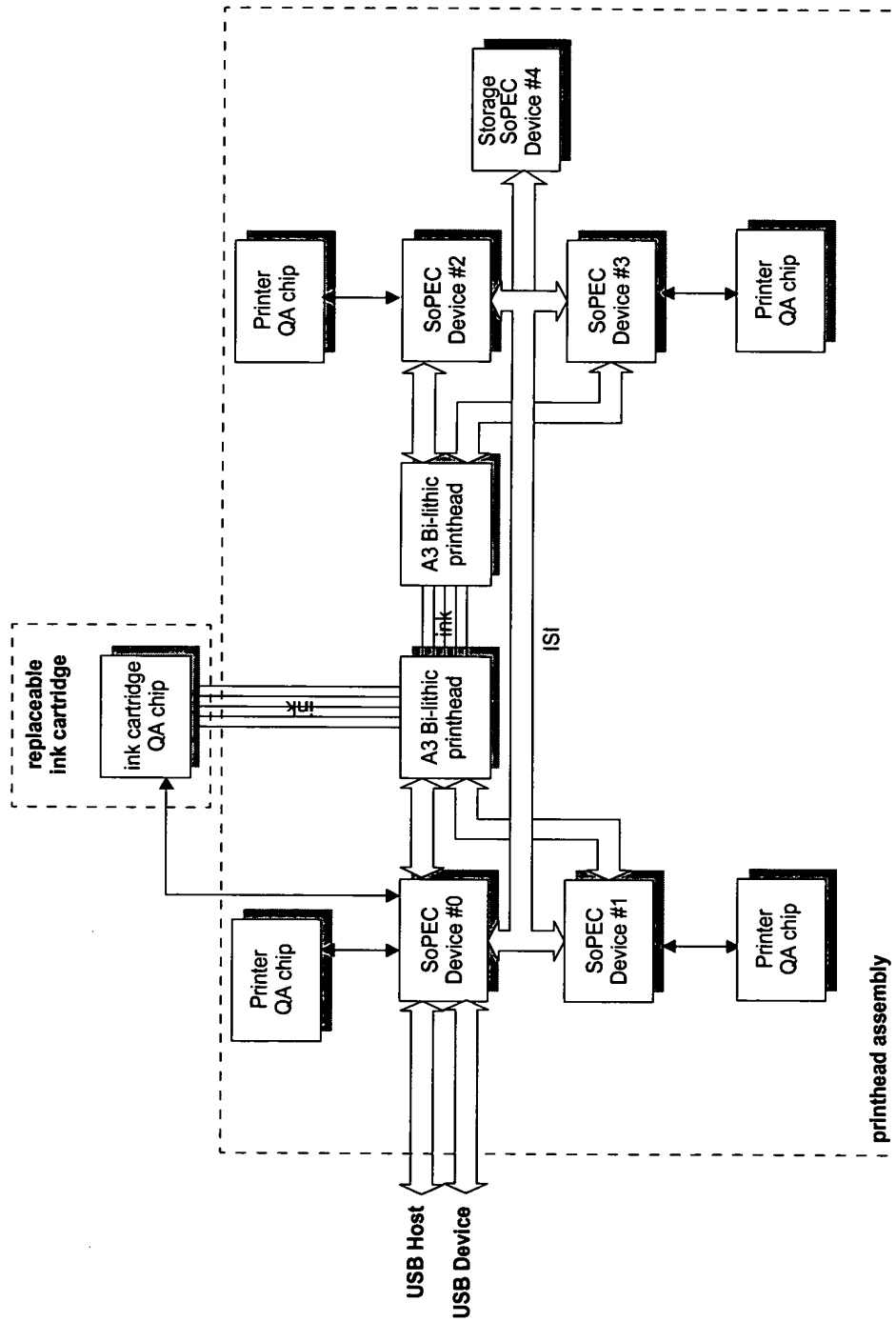


FIG. 27

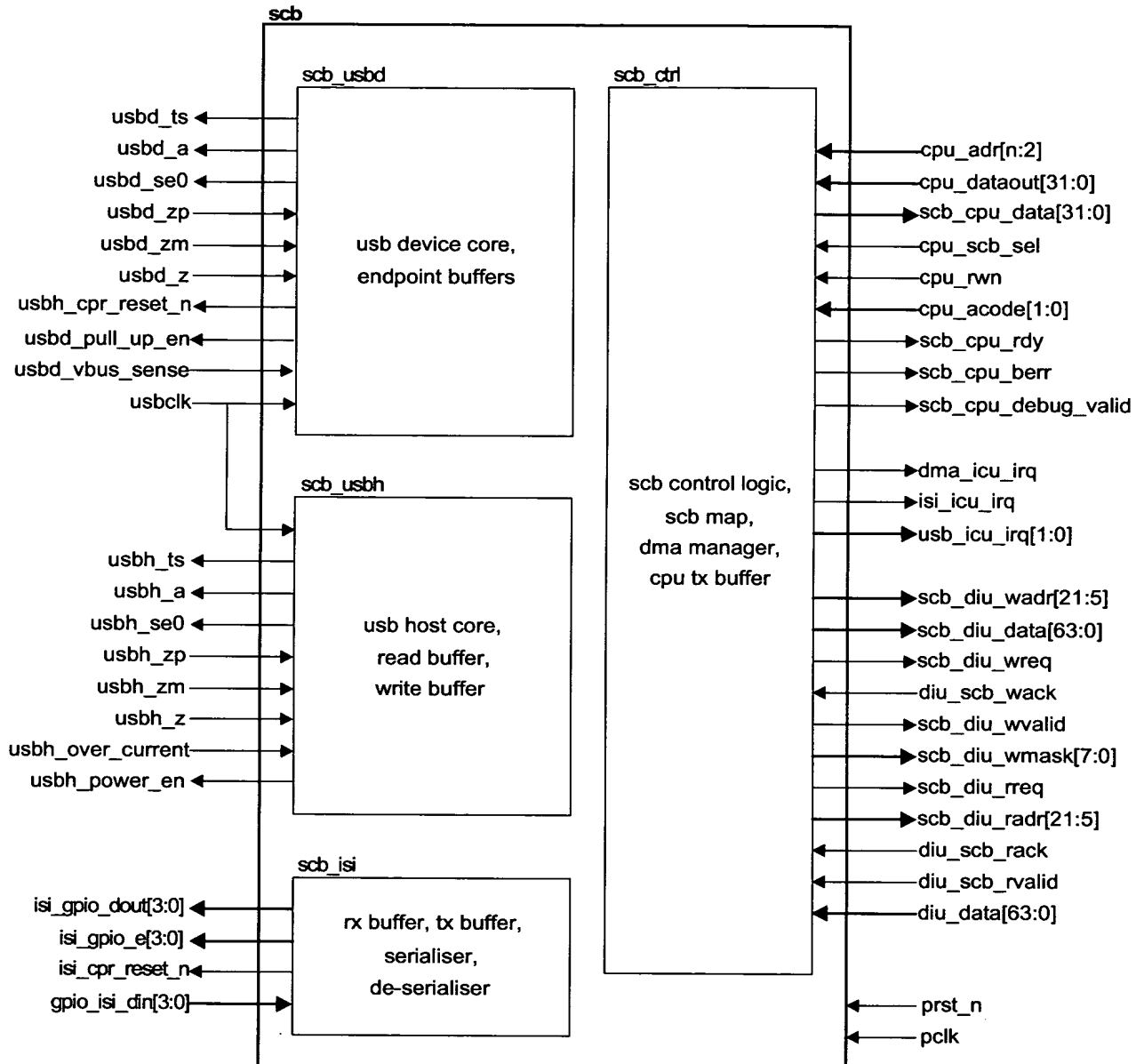


FIG. 28

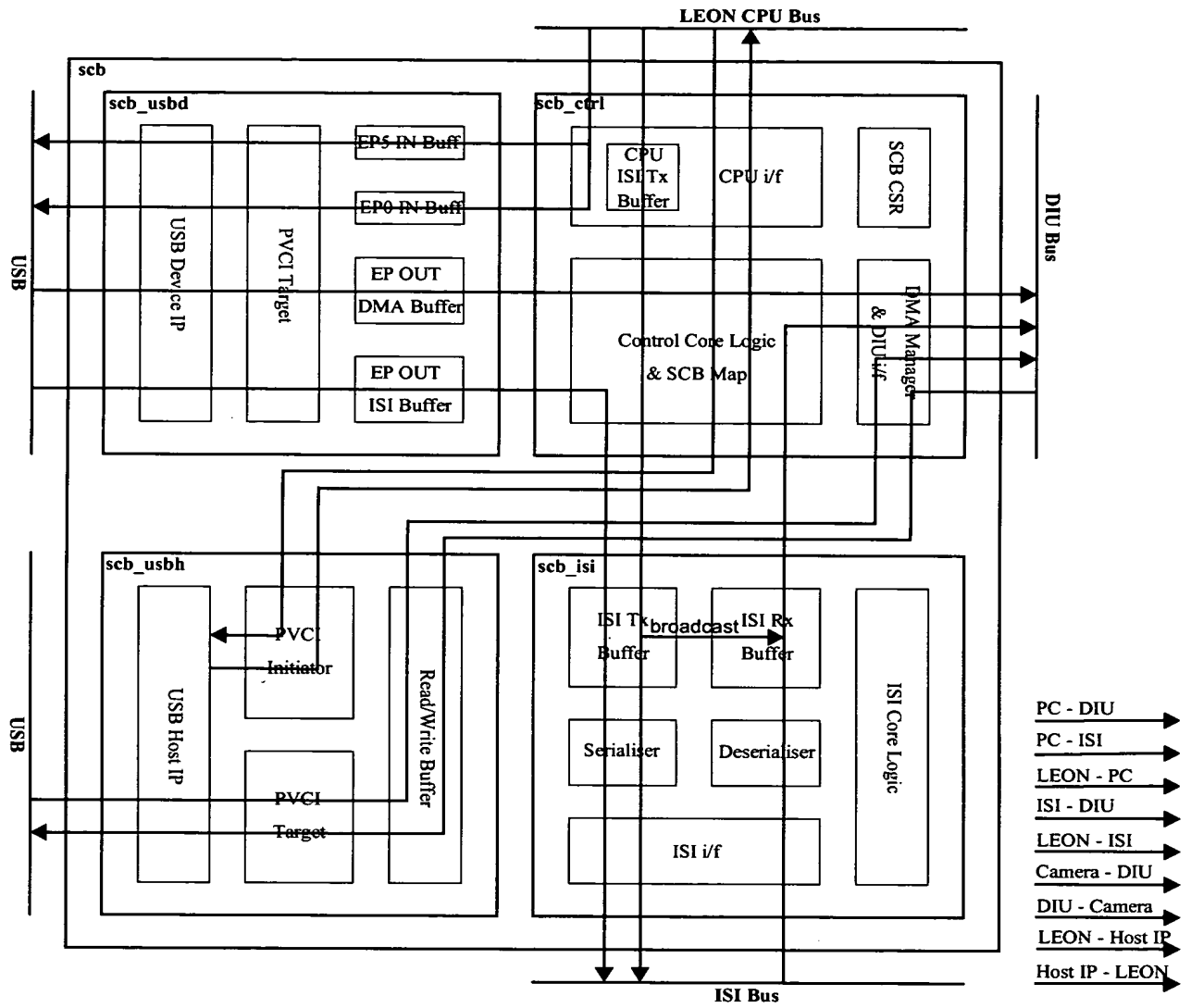


FIG. 29

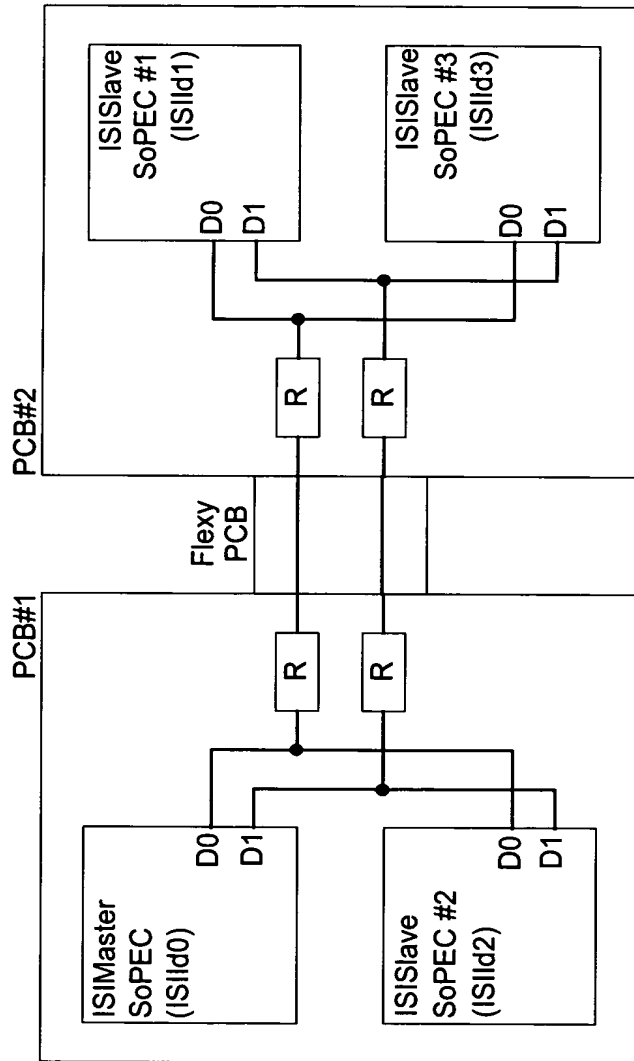


FIG. 30

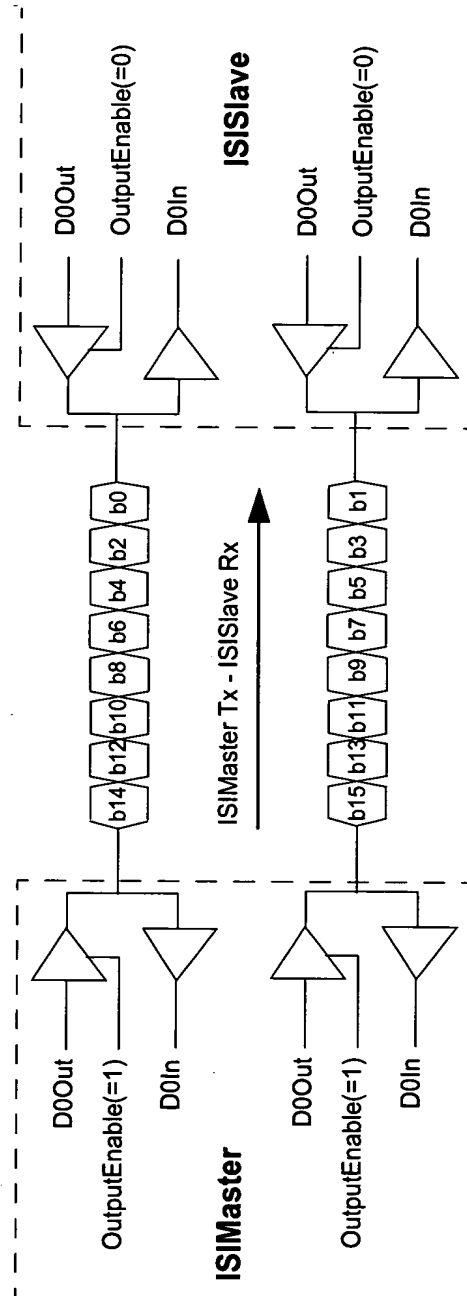
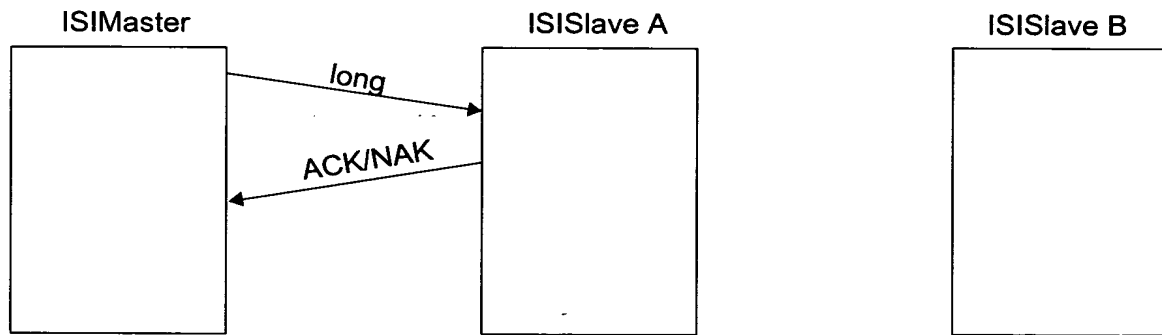
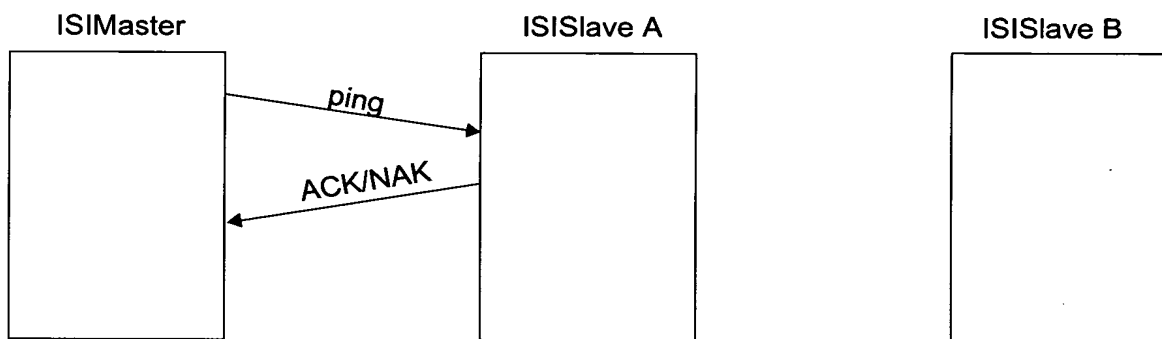


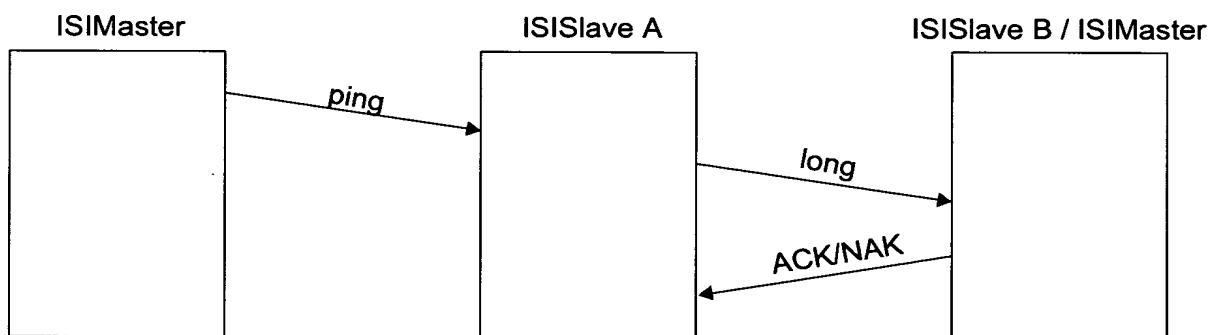
FIG. 31



**Transaction 1: Long packet to an addressed ISISlave**



**Transaction 2: Ping packet to an addressed ISISlave. ISISlave has nothing to send**



**Transaction 3: Ping packet to an addressed ISISlave. ISISlaveA responds with a long packet to ISISlaveB (or the ISIMaster) and ISISlaveB (or the ISIMaster) responds with an ACK or NAK.**

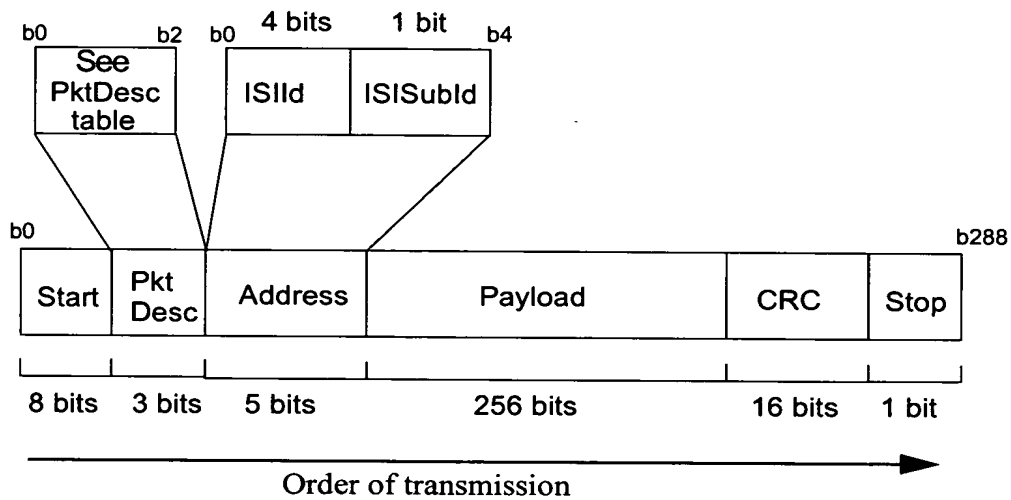


FIG. 33

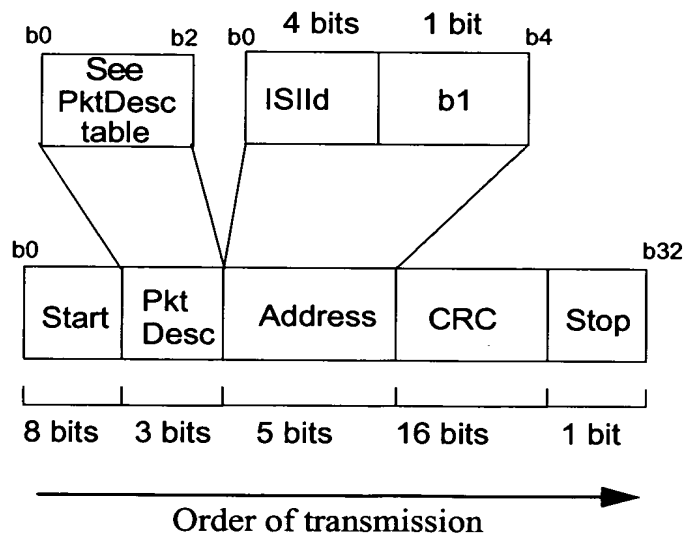


FIG. 34

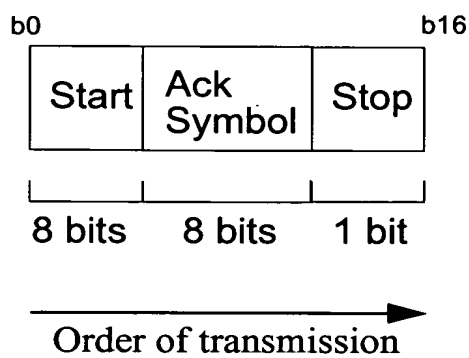


FIG. 35

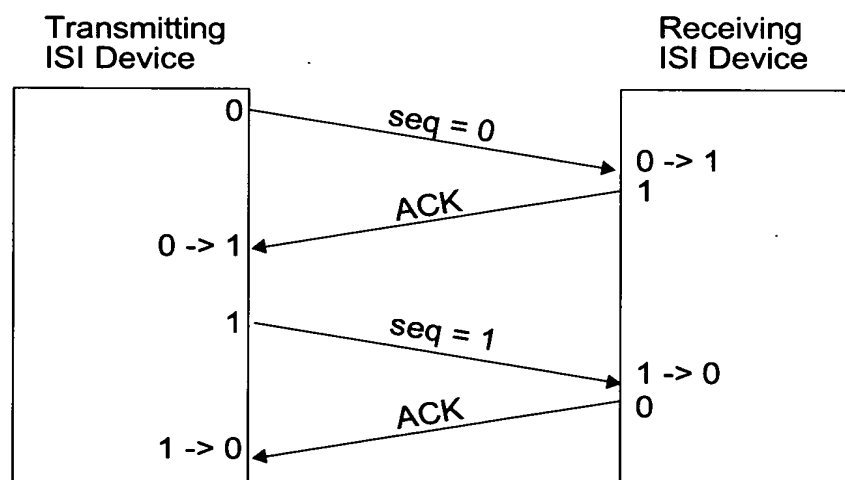


FIG. 36



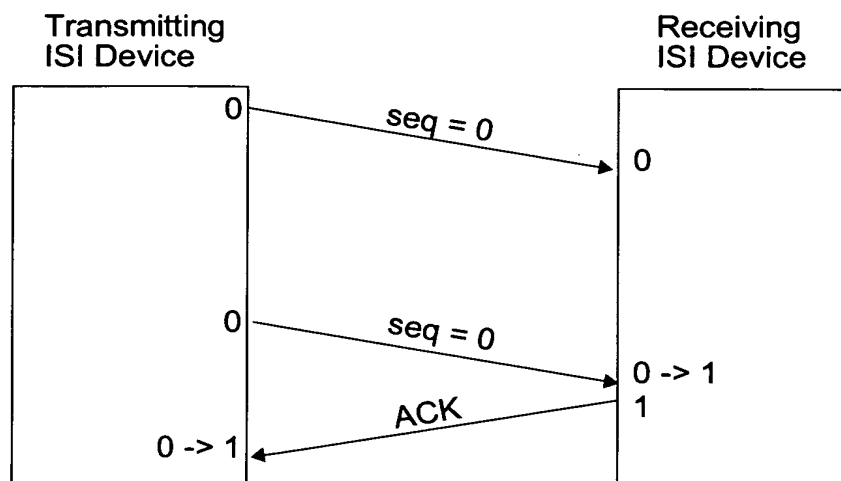


FIG. 37

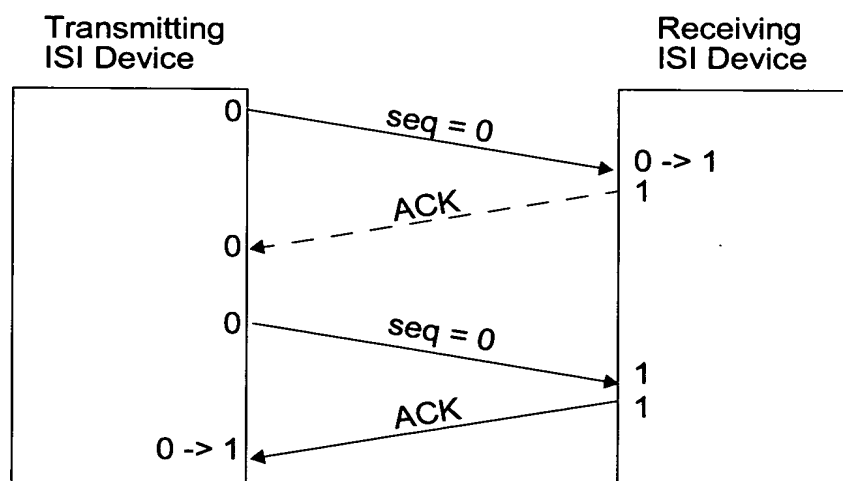


FIG. 38

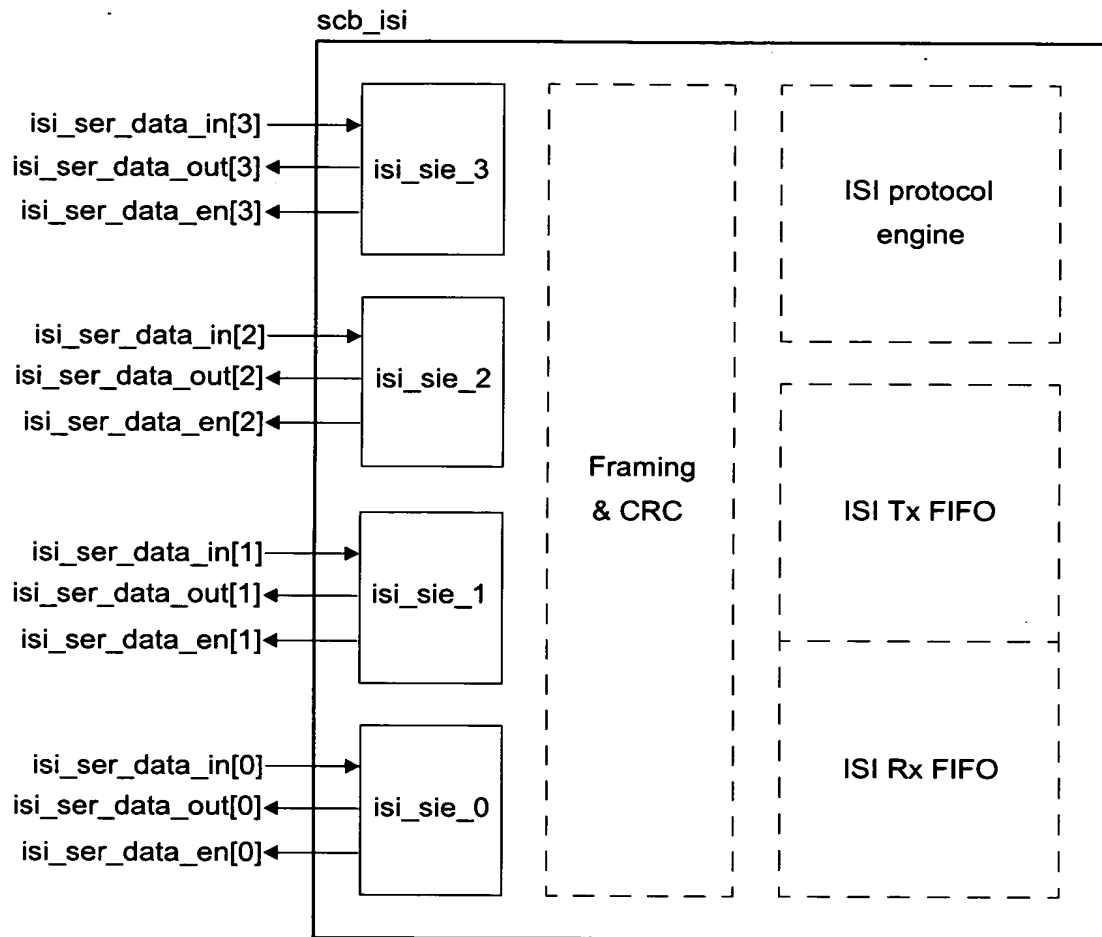


FIG. 39

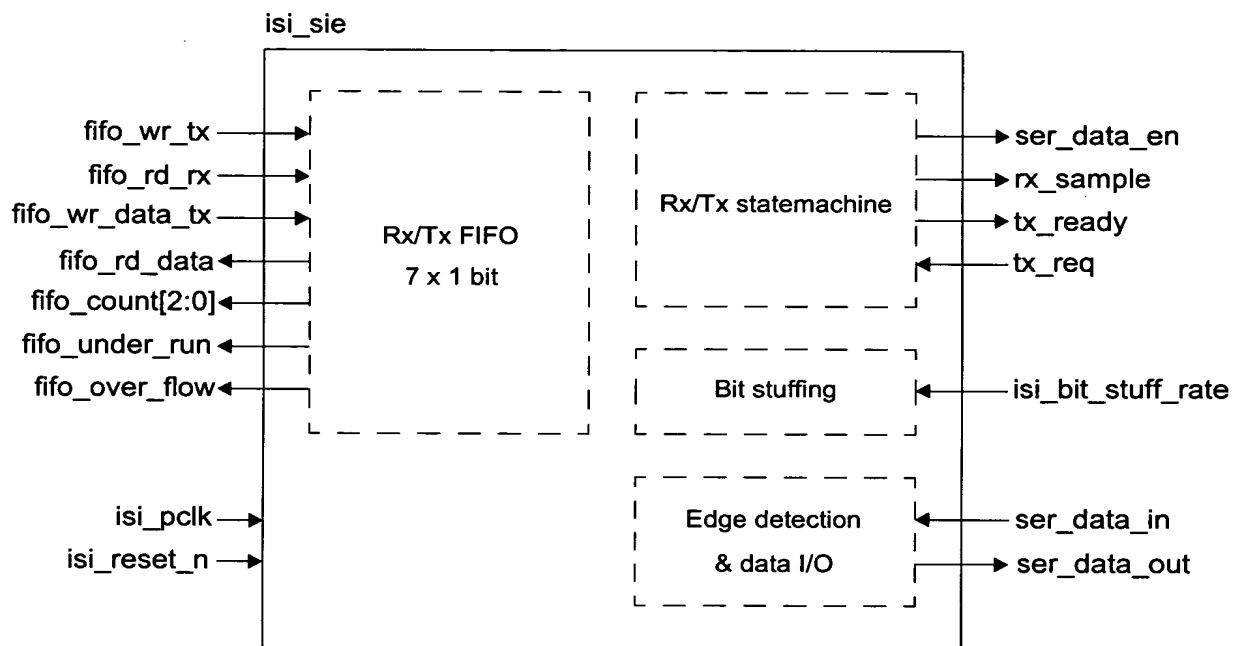


FIG. 40

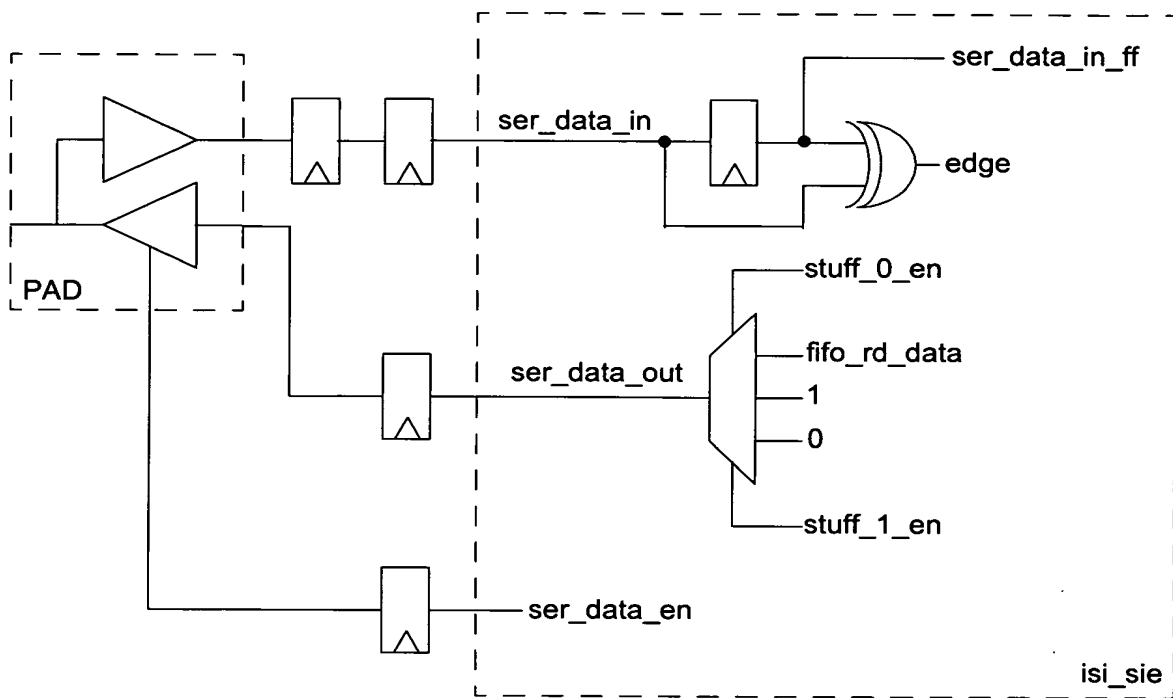


FIG. 41

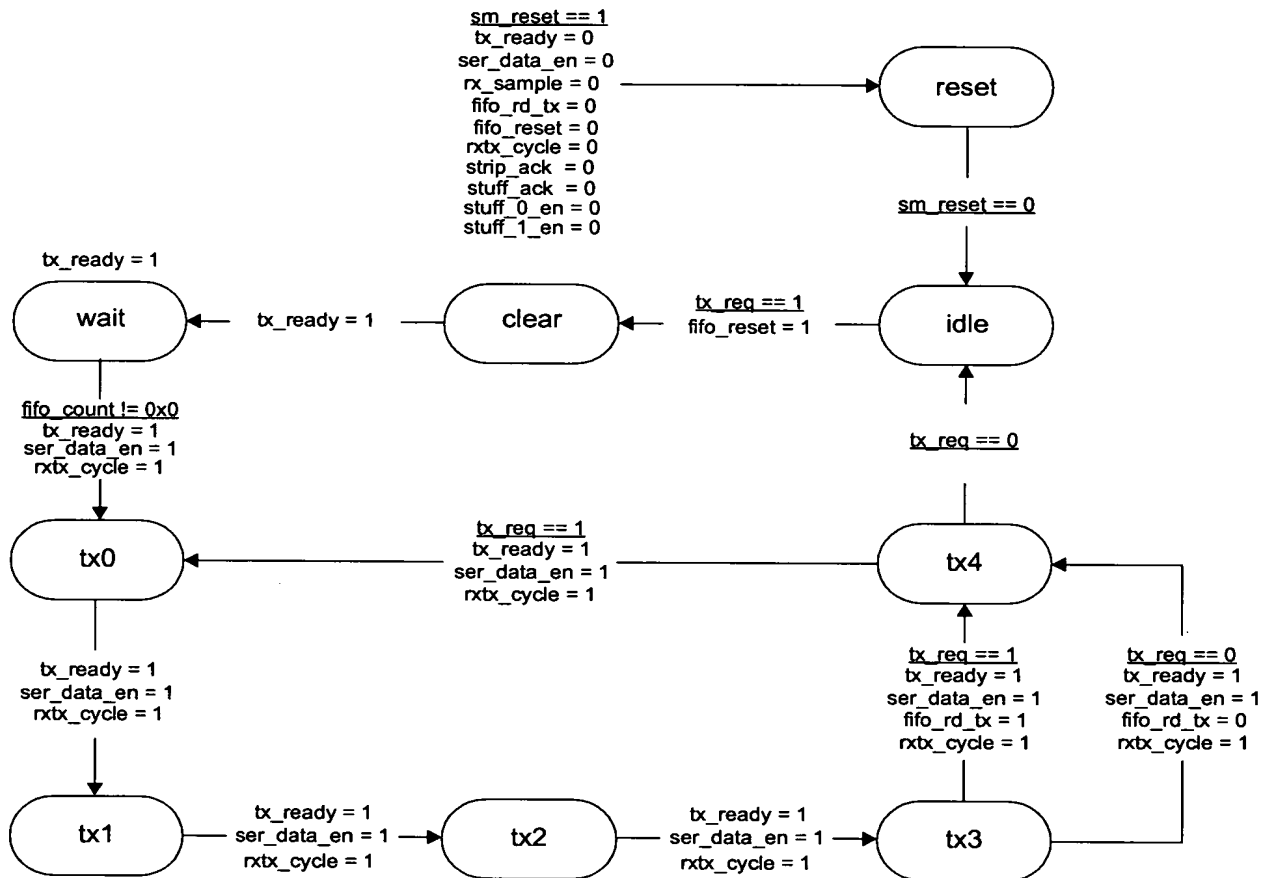


FIG. 42

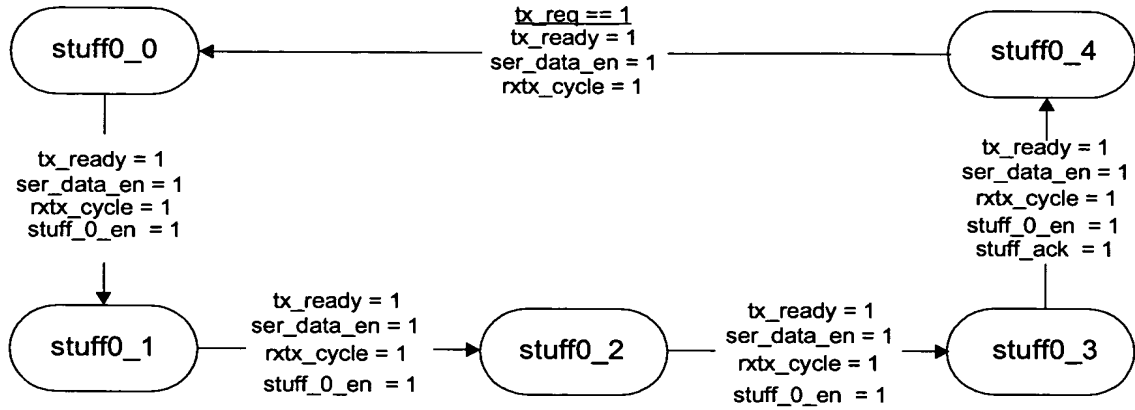


FIG. 43

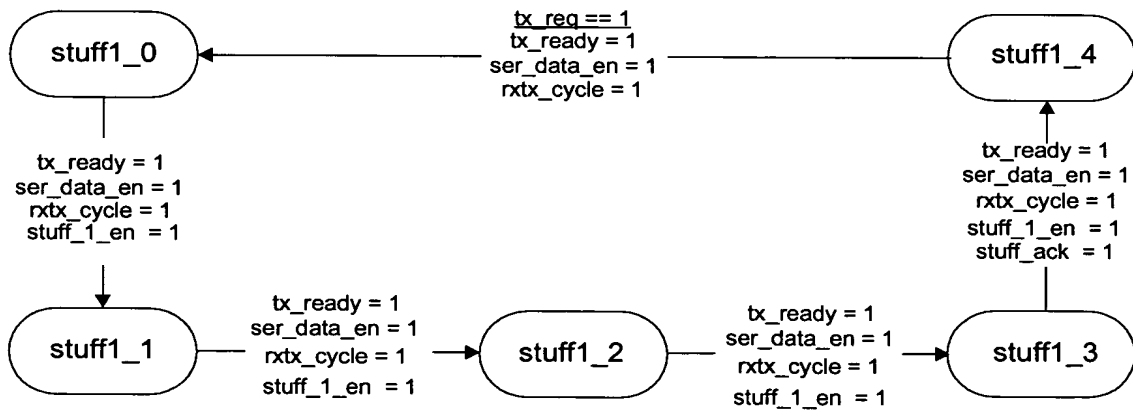


FIG. 44

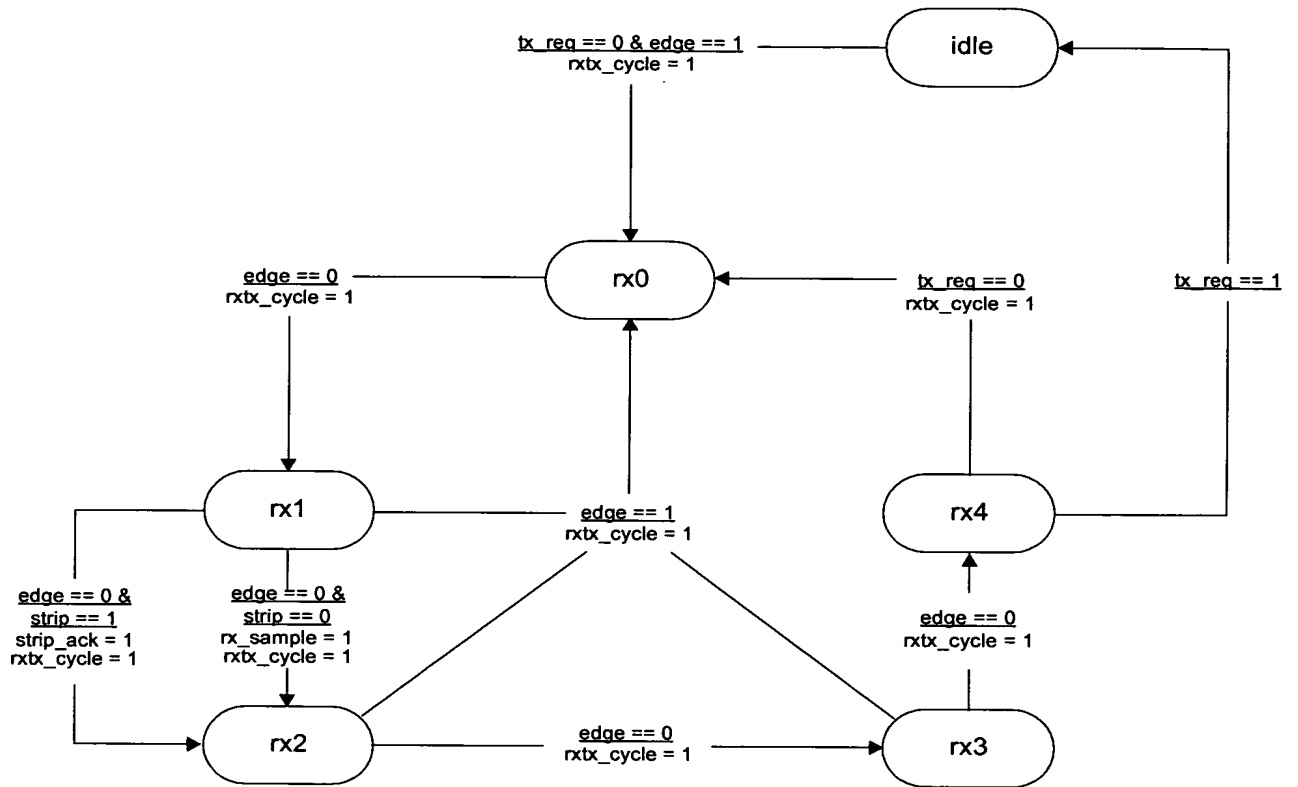


FIG. 45

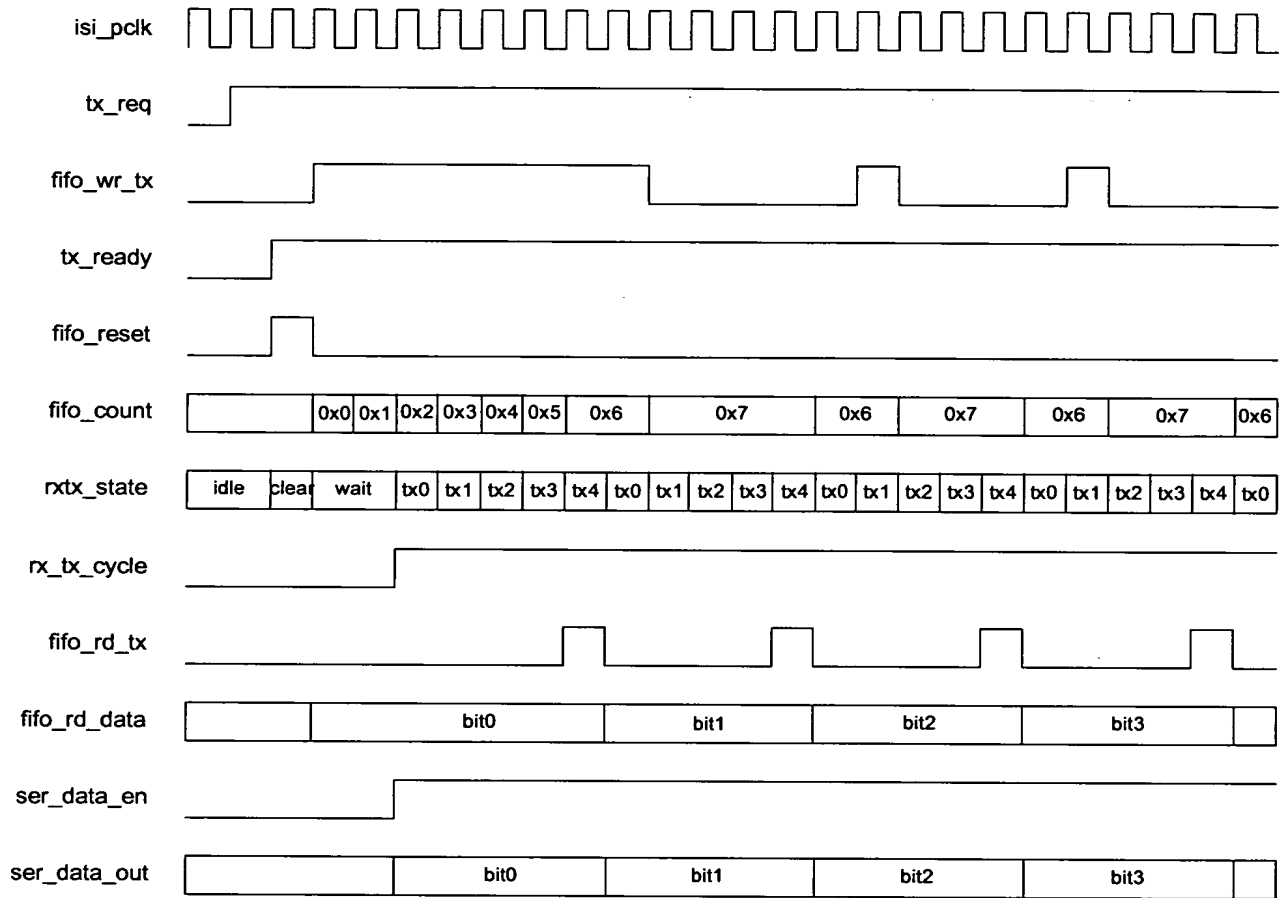


FIG. 46



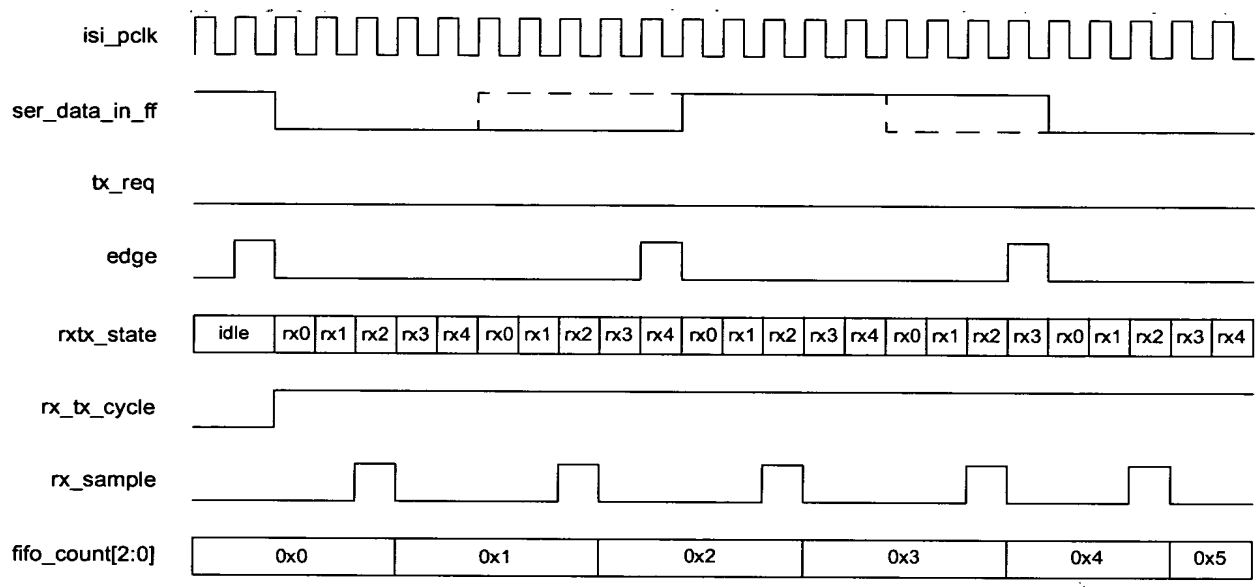


FIG. 47

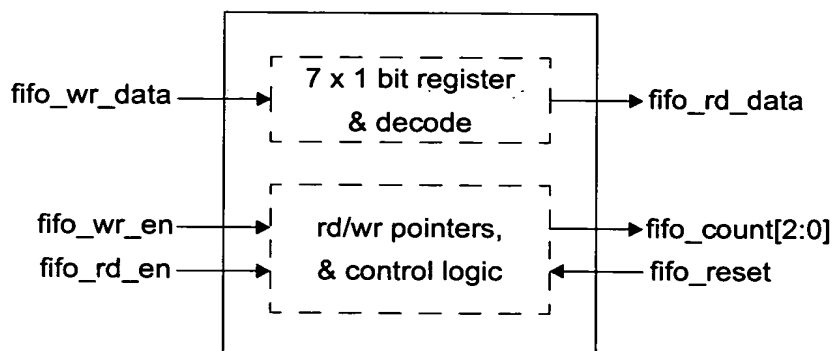


FIG. 48

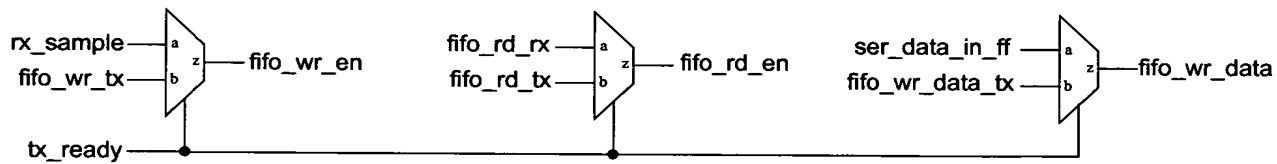


FIG. 49

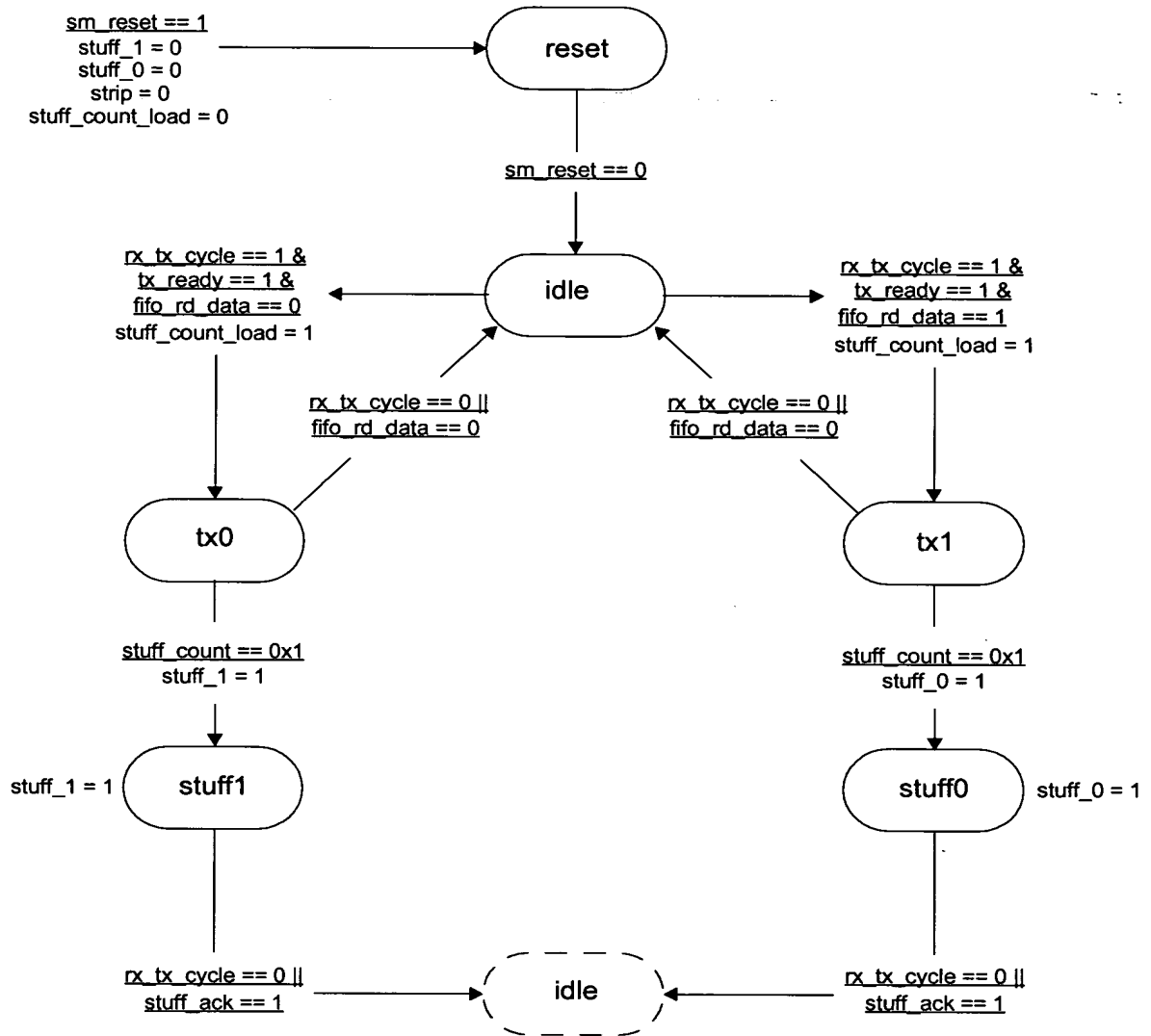


FIG. 50

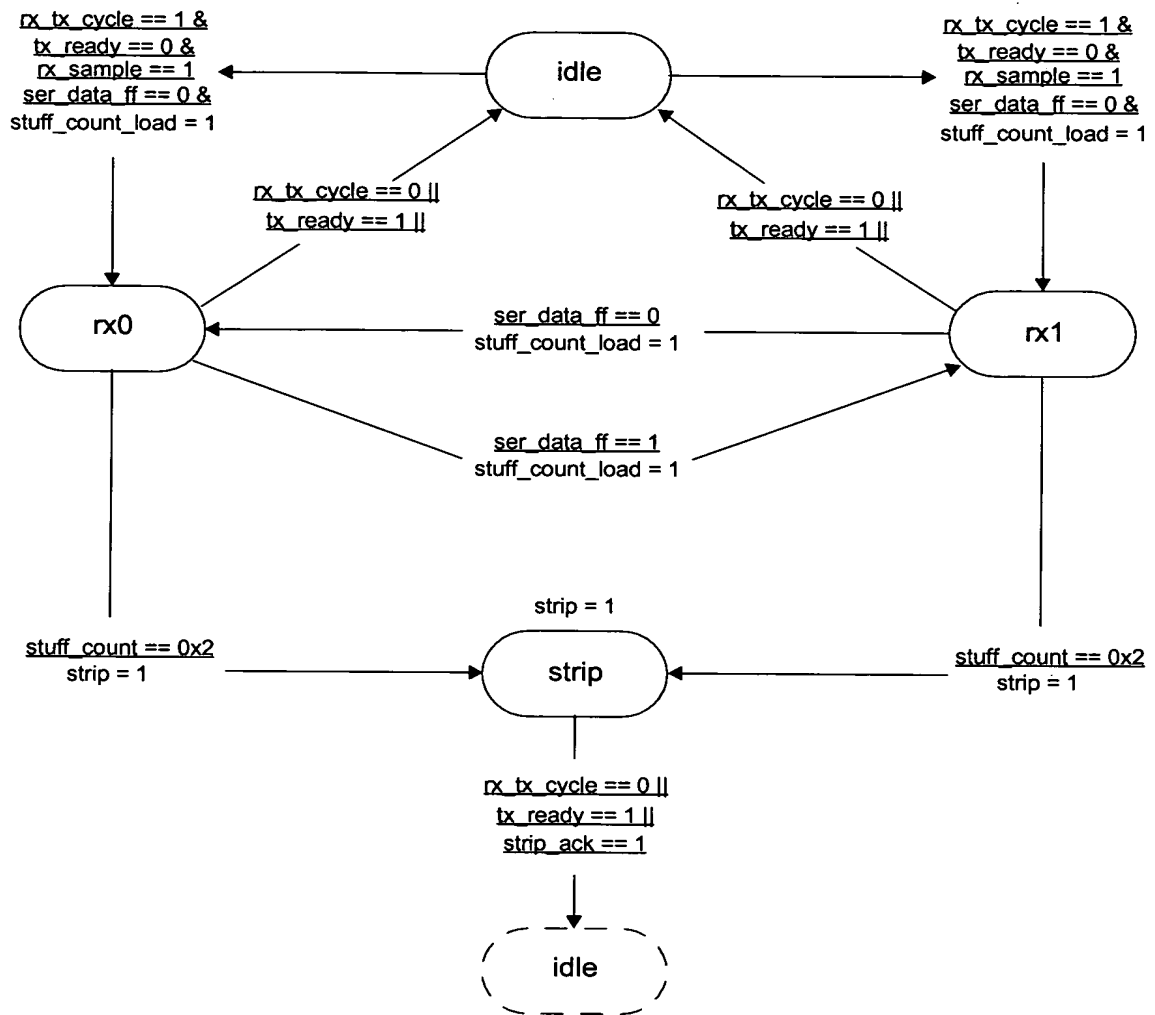


FIG. 51

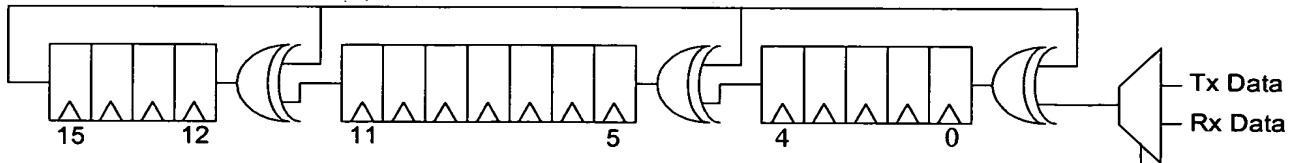


FIG. 52

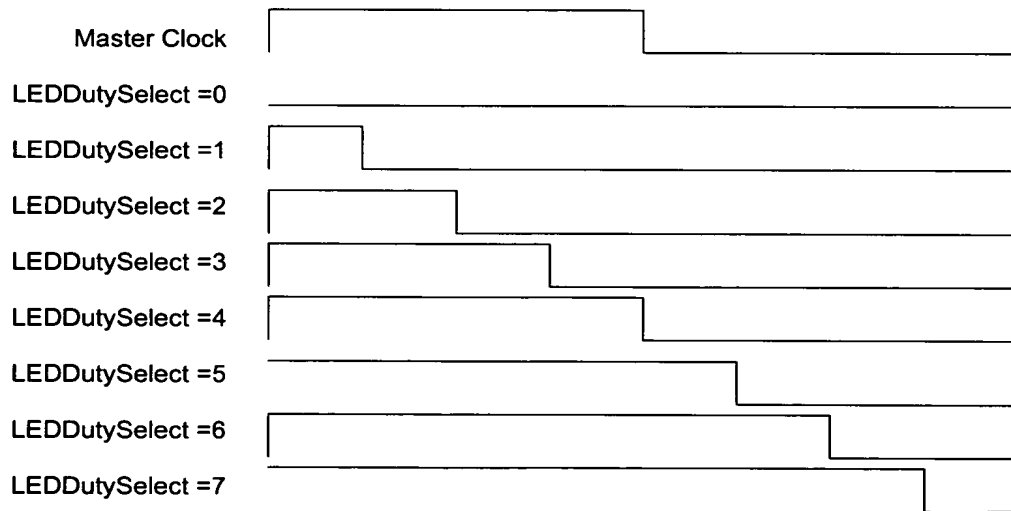
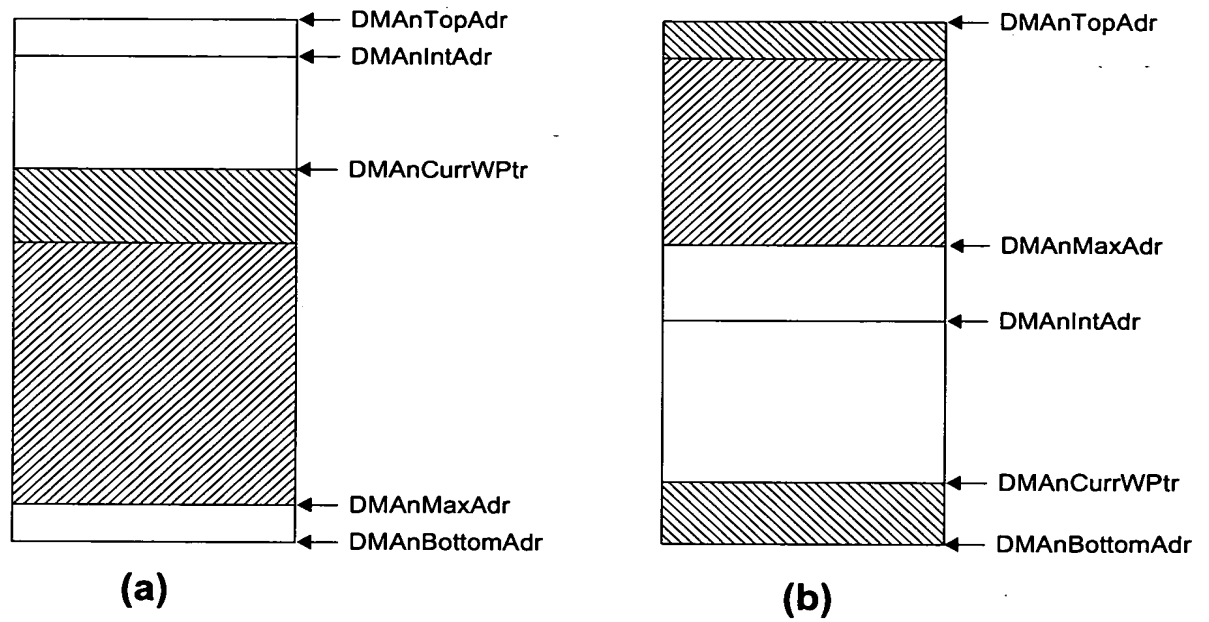


FIG. 54



**Key:**

- Free buffer space
- Filled buffer space (unprocessed data)
- Buffer space filled since last write to the DMAntIntAdr/DMAntMaxAdr registers

FIG. 53

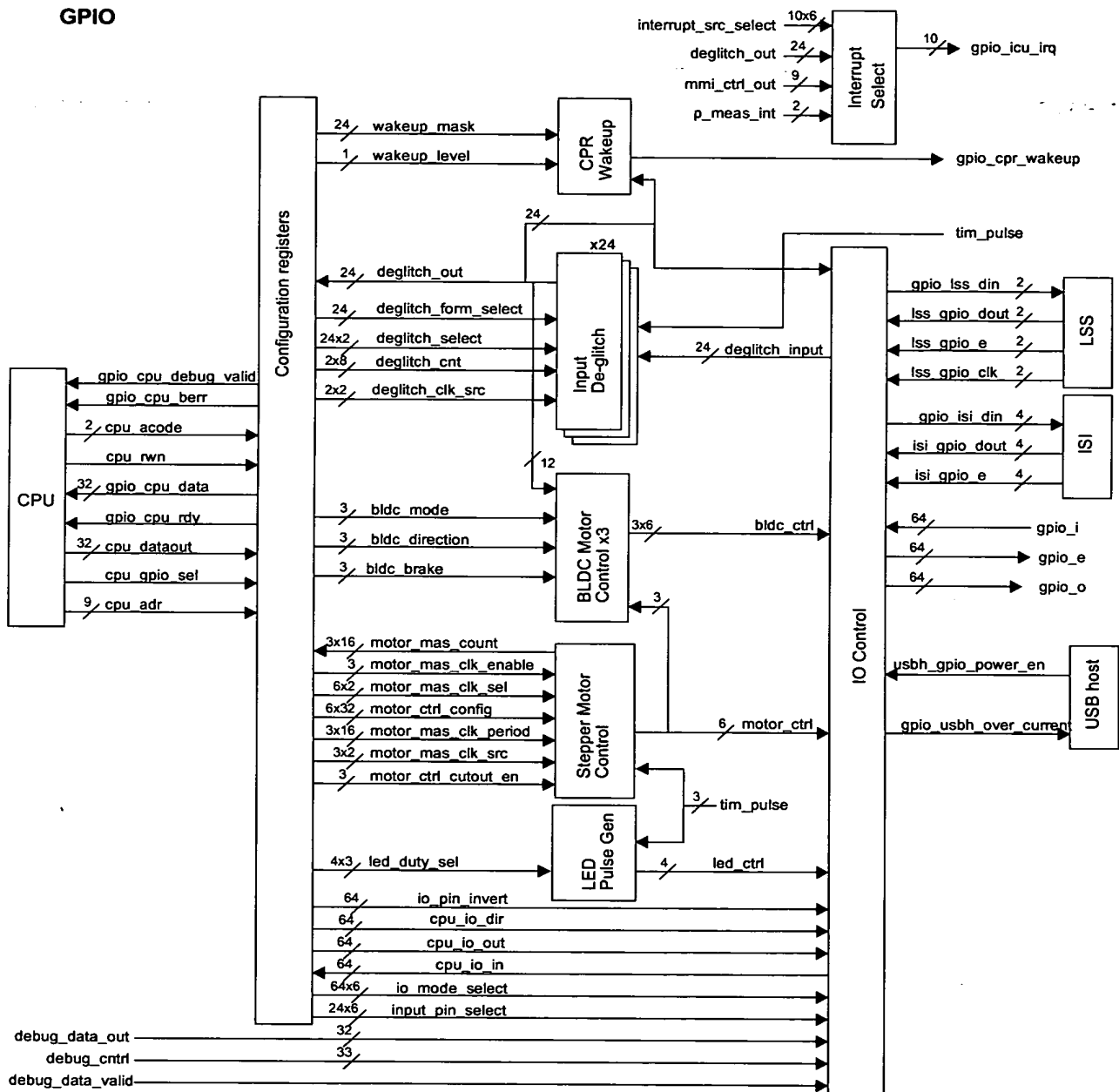


FIG. 55

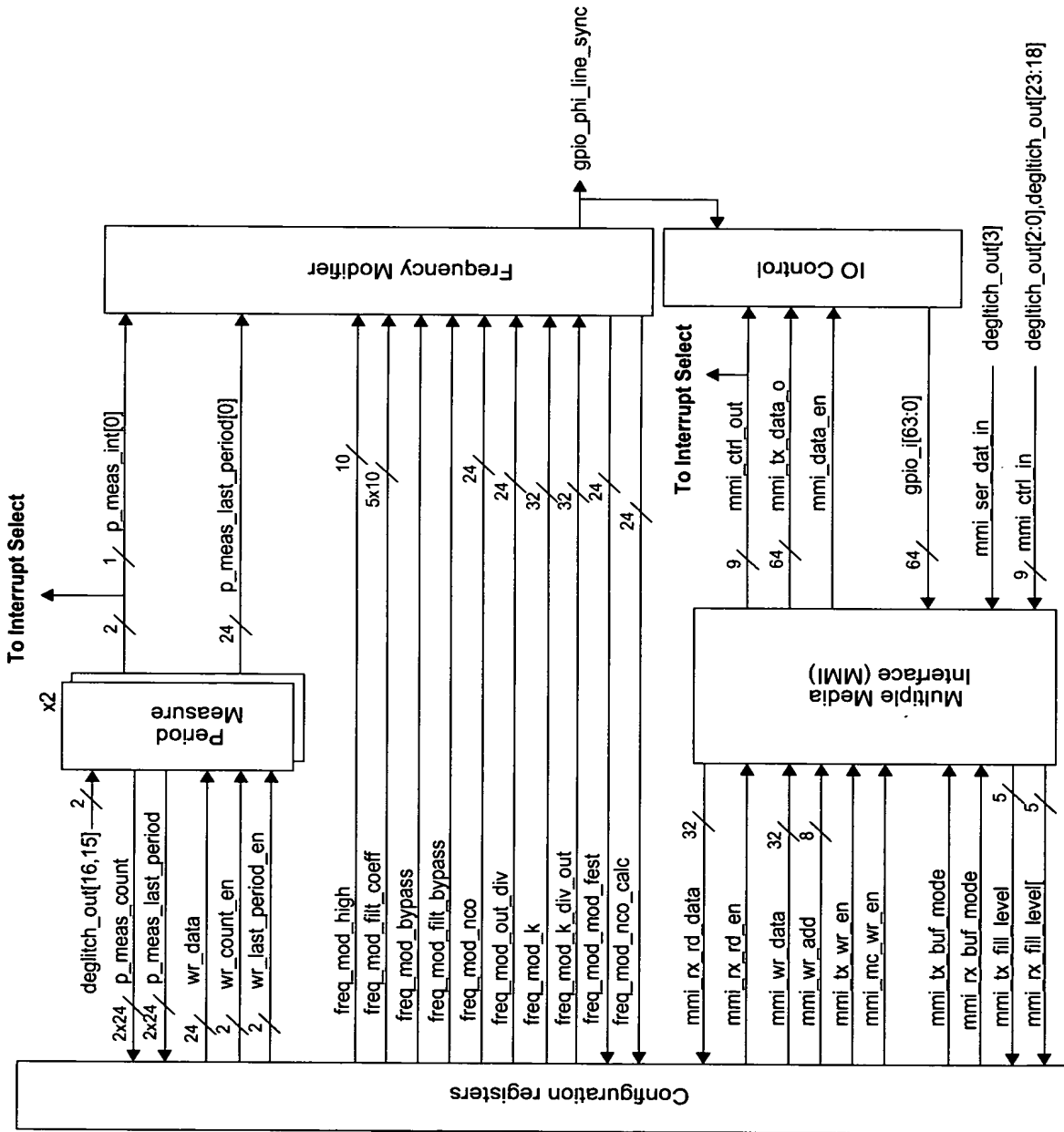


FIG. 56



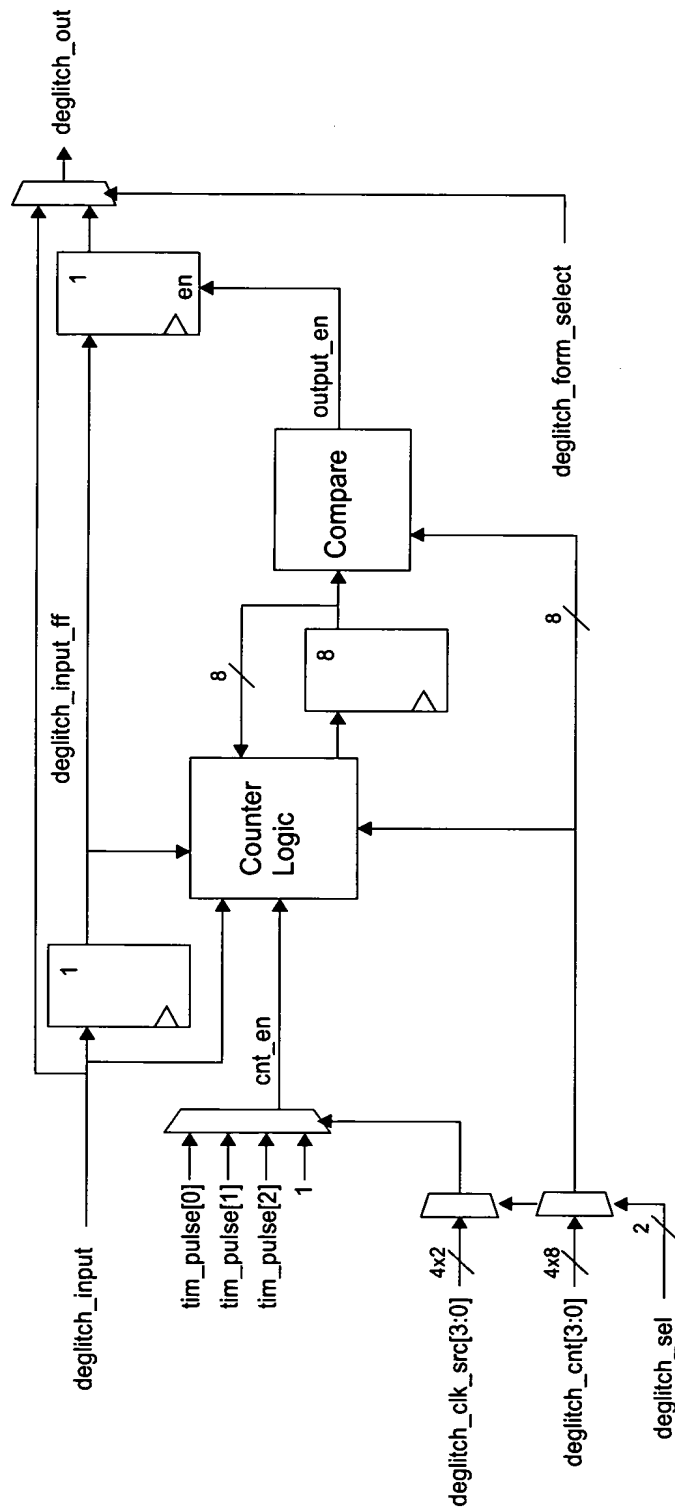


FIG. 57

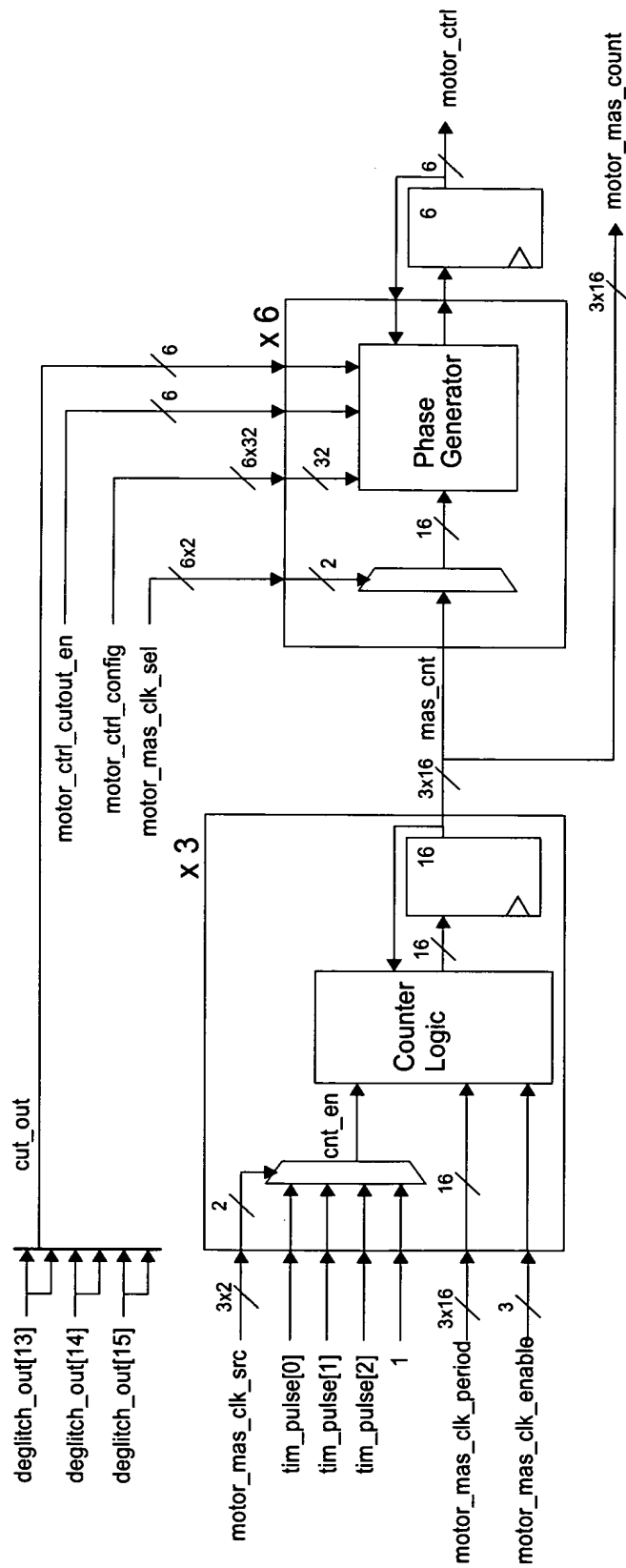


FIG. 58

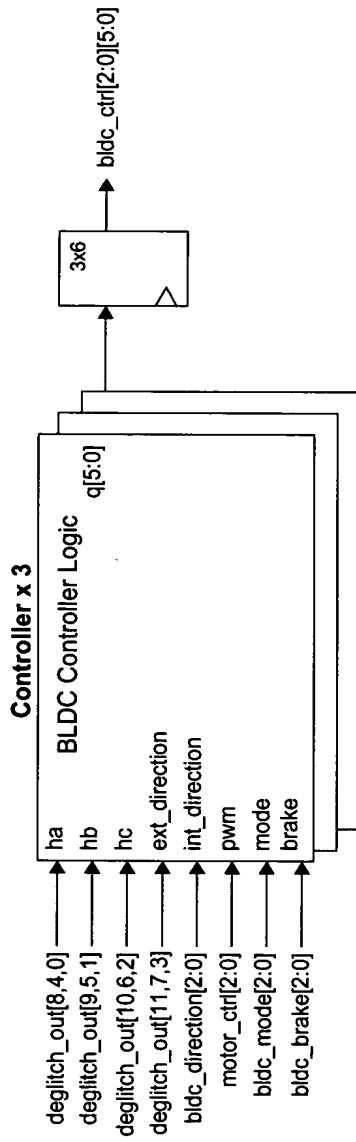


FIG. 59

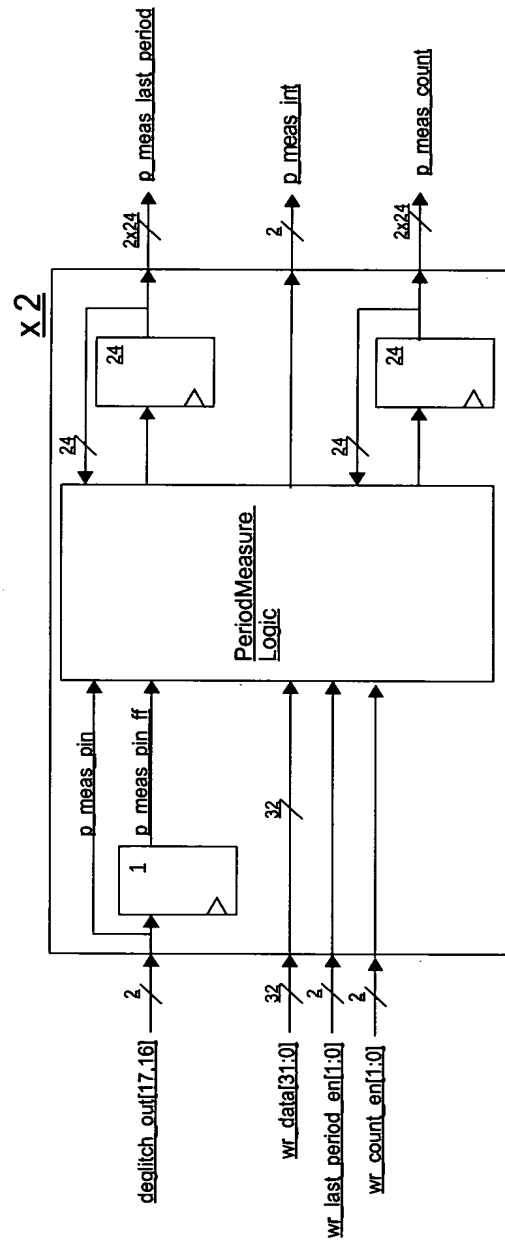


FIG. 60

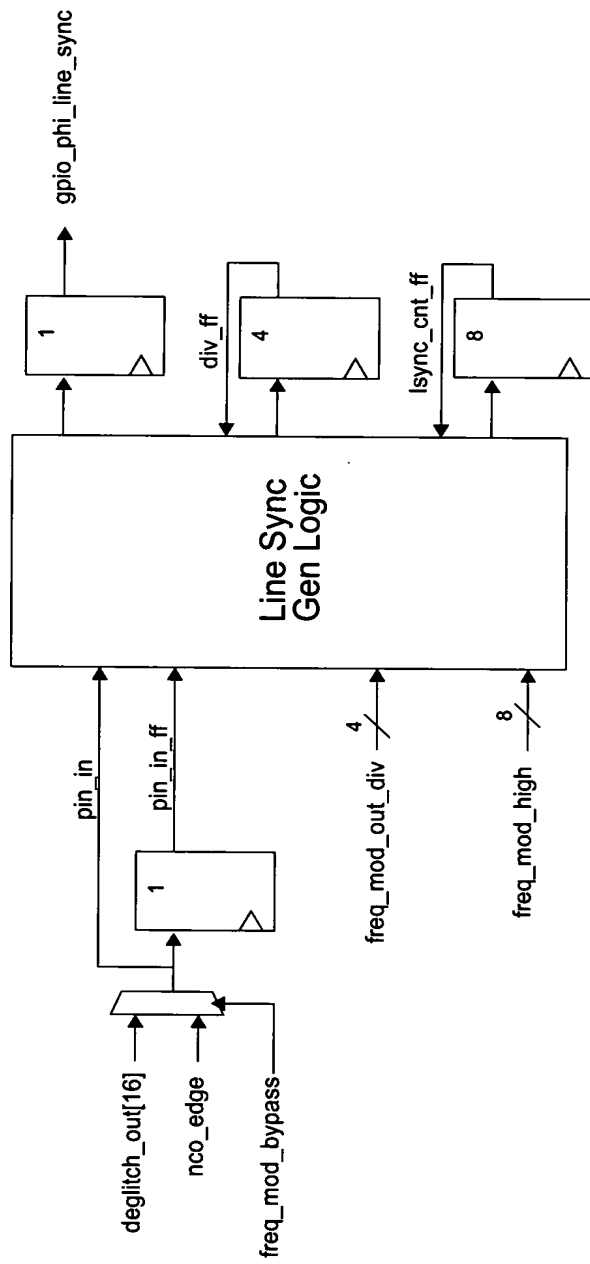


FIG. 61

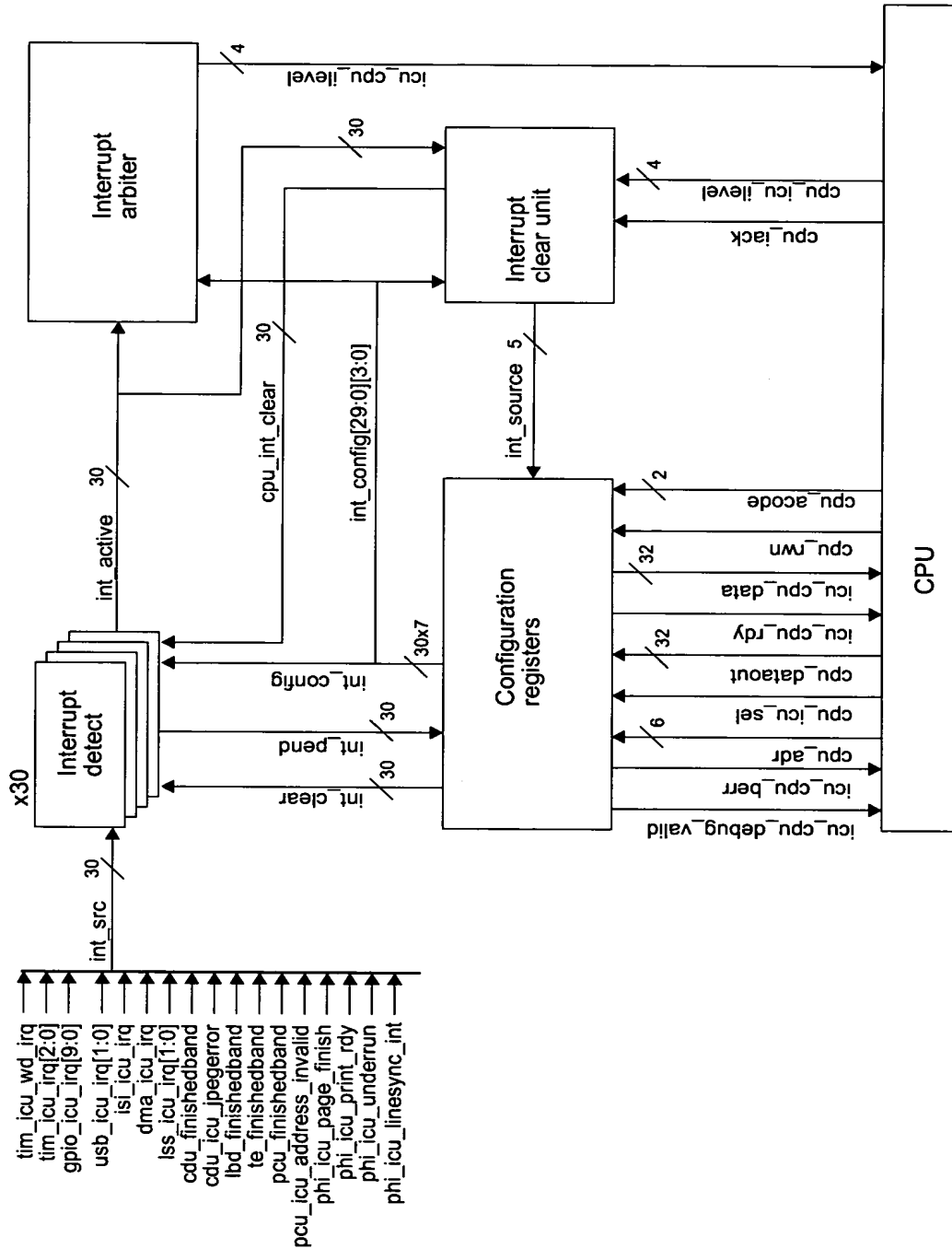


FIG. 62

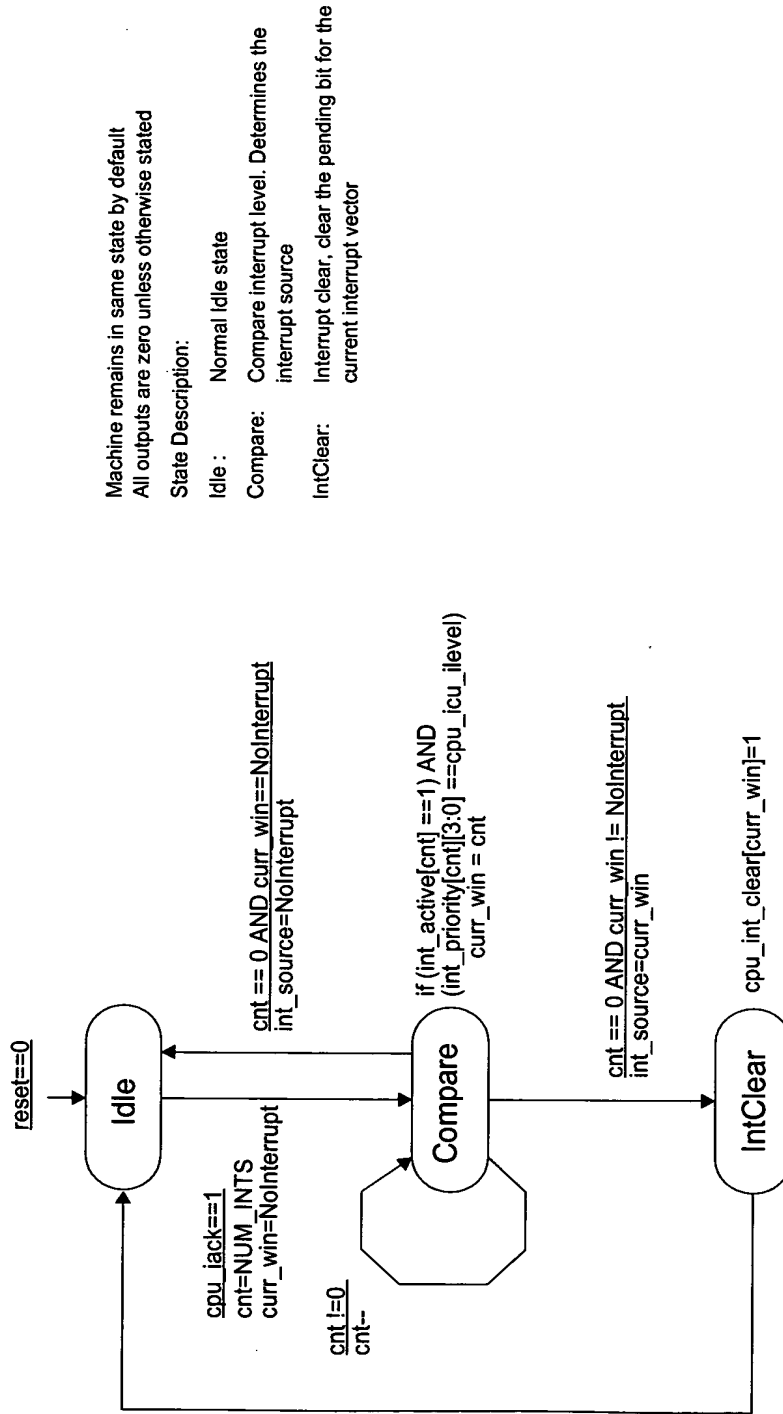


FIG. 63

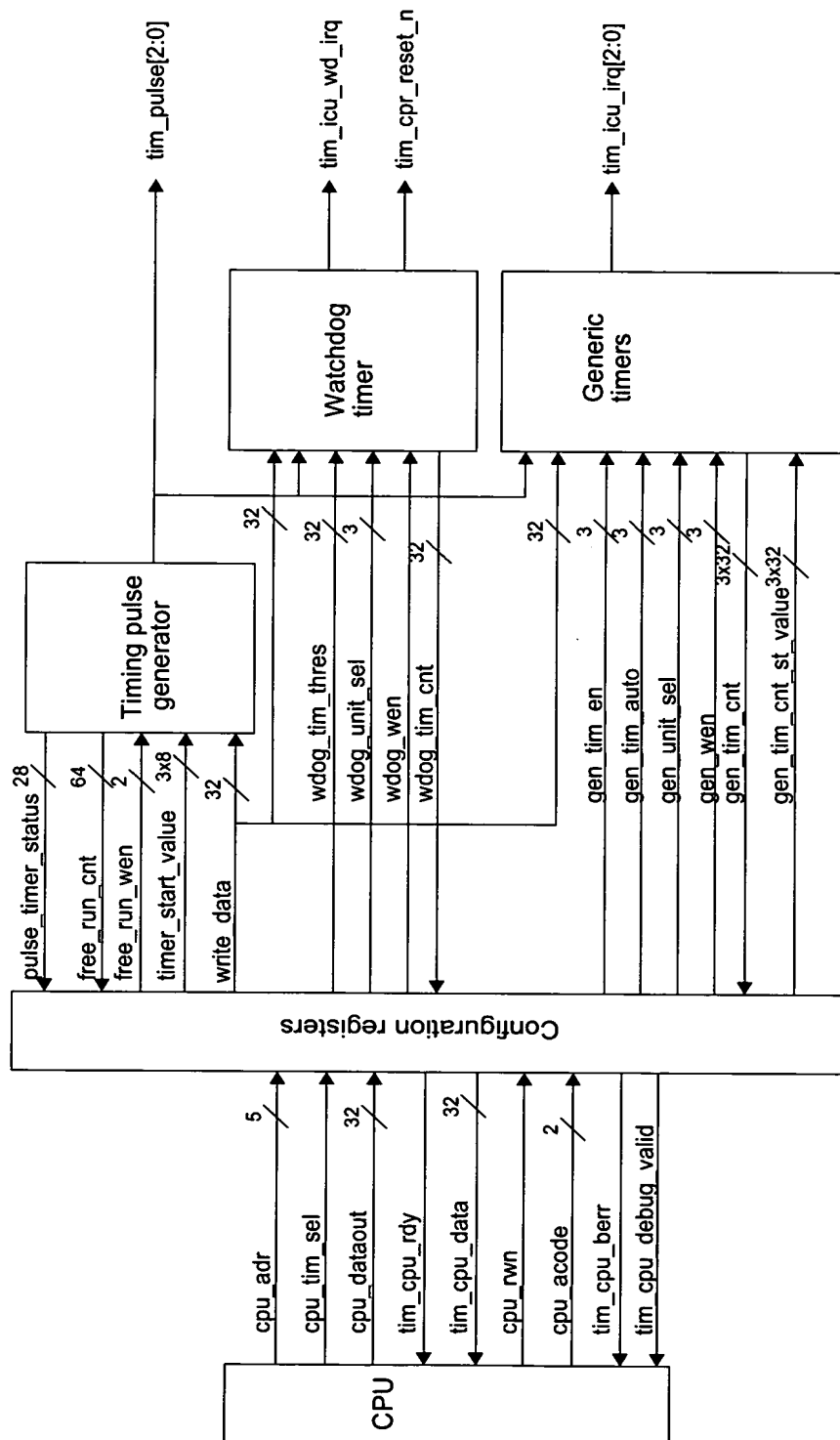


FIG. 63A

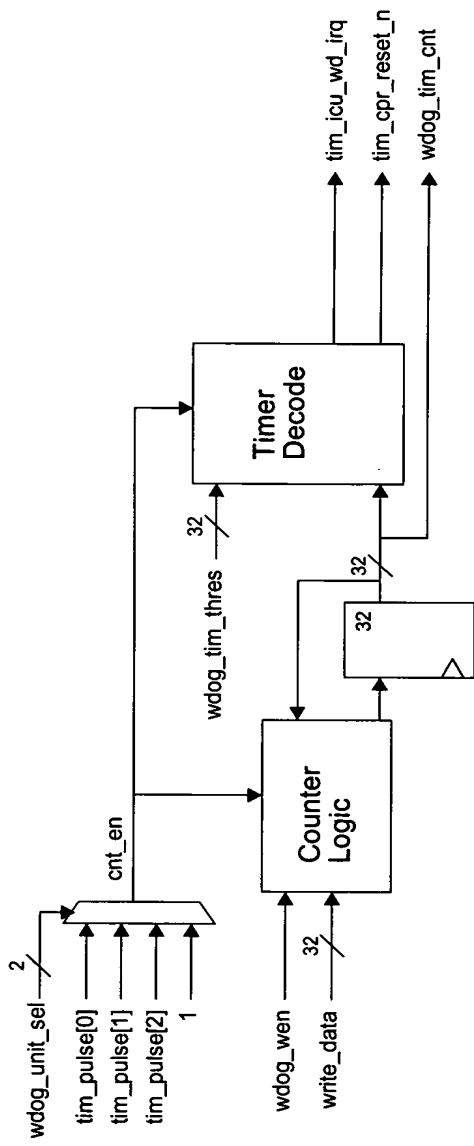


FIG. 64

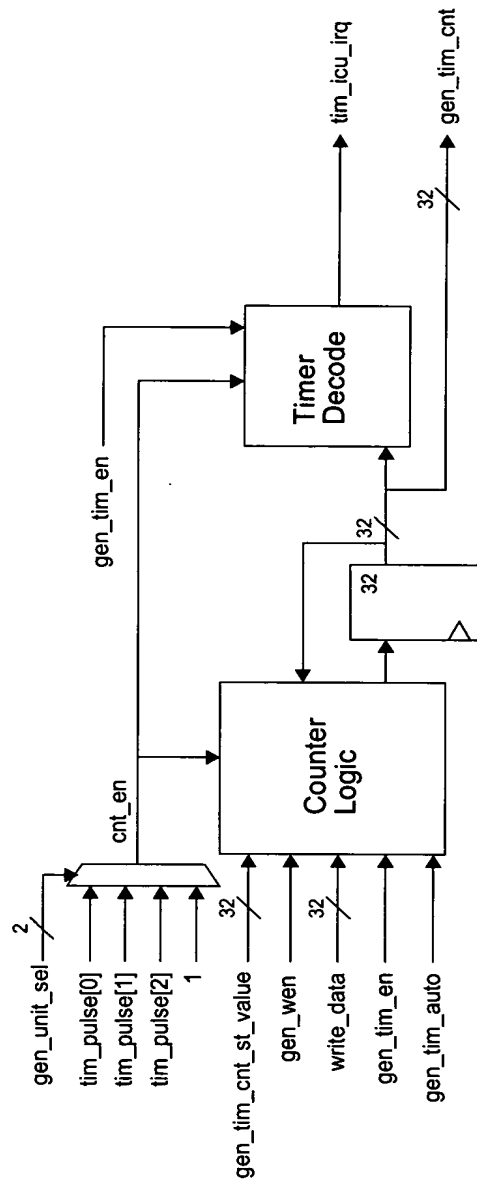


FIG. 65



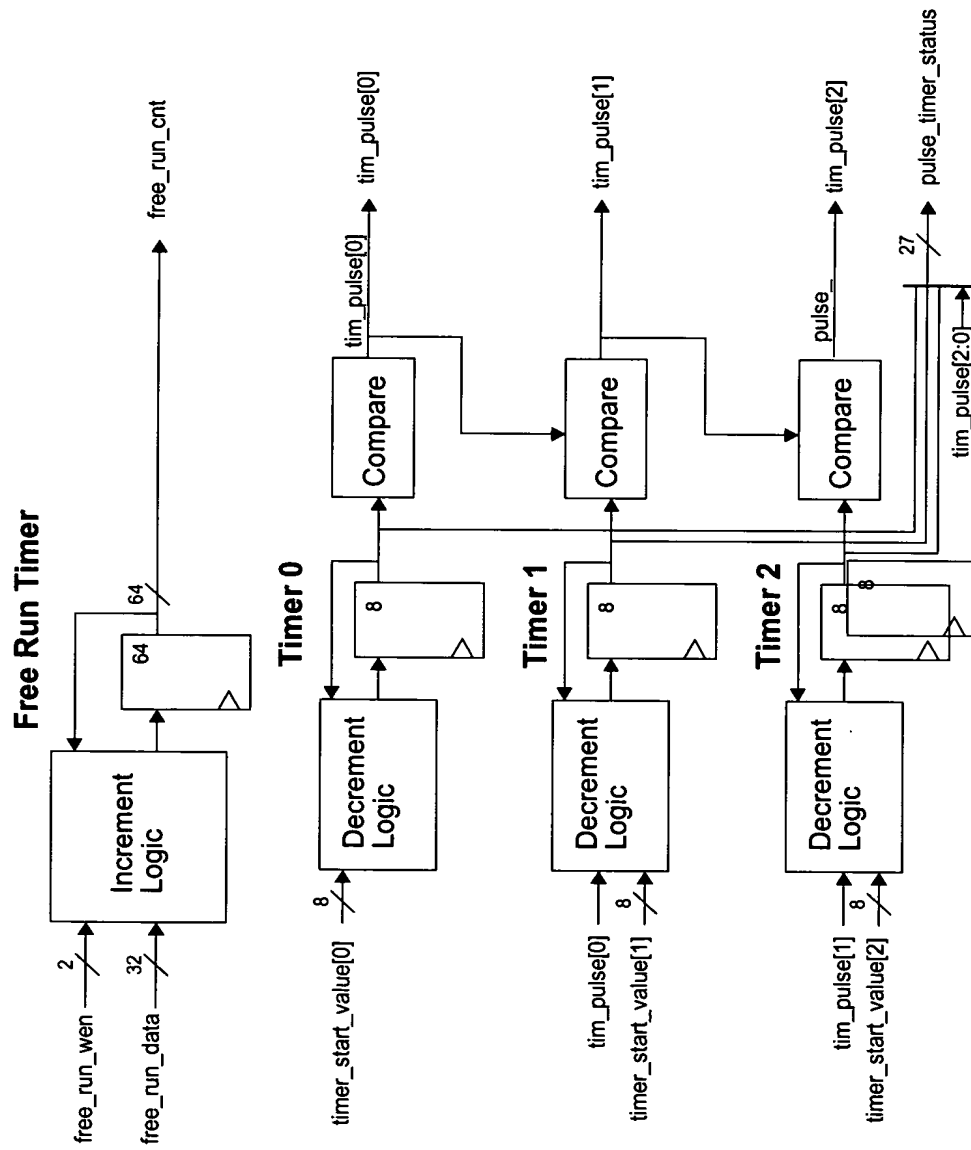
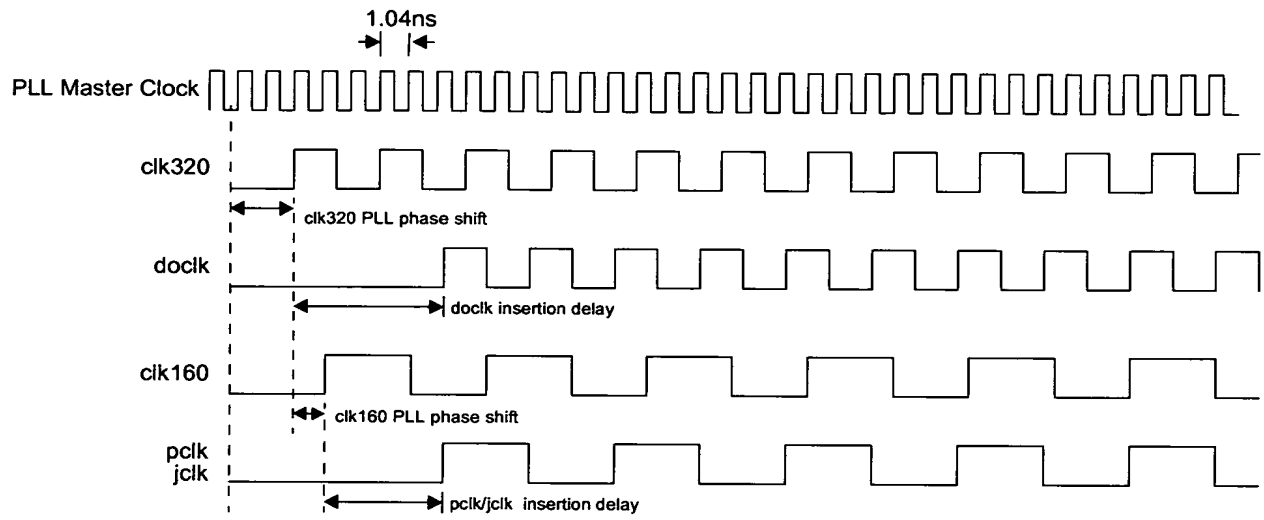


FIG. 66

*FIG. 67*

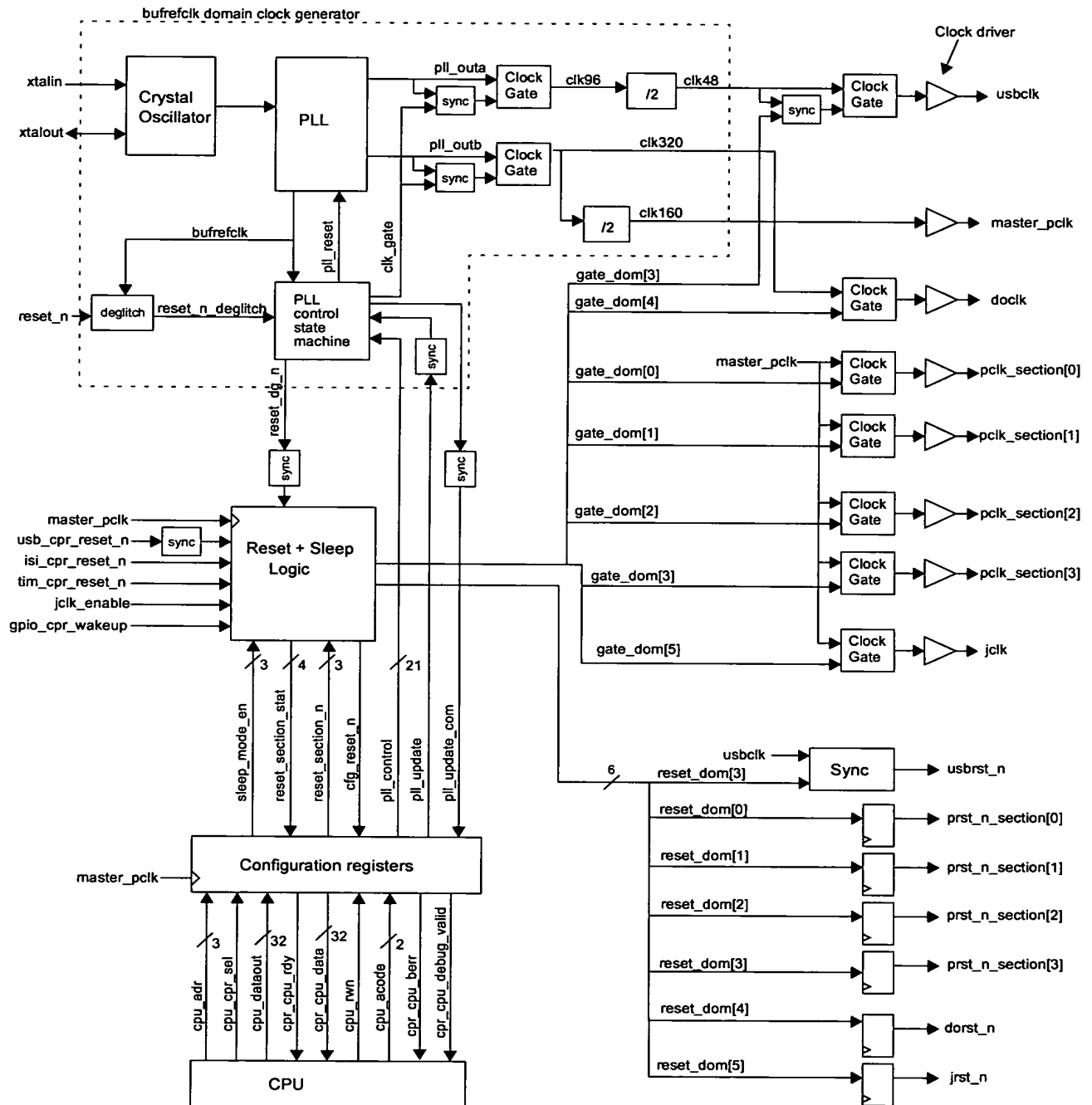
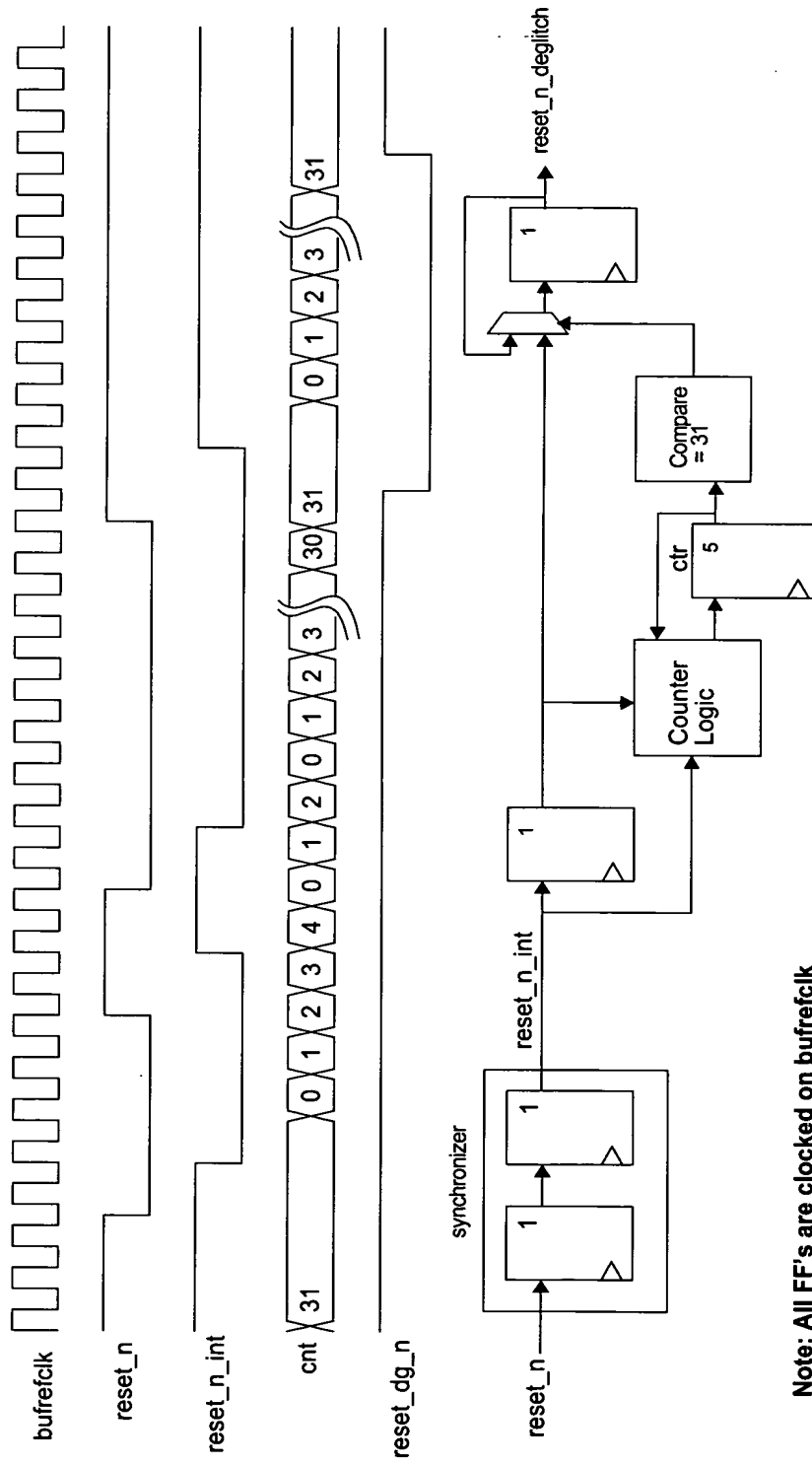


FIG. 68



Note: All FF's are clocked on bufrefclk

FIG. 69

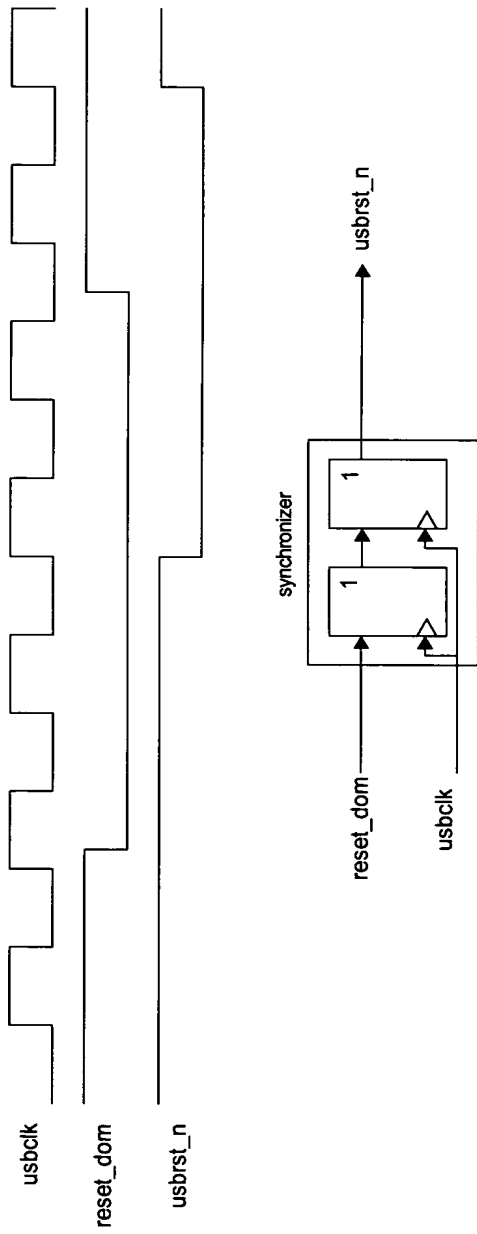


FIG. 70

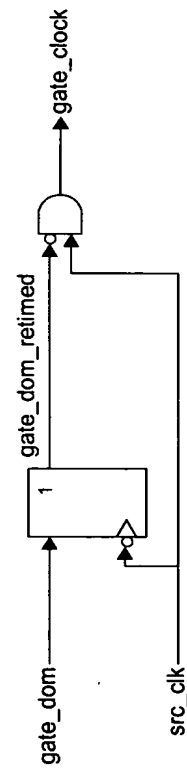
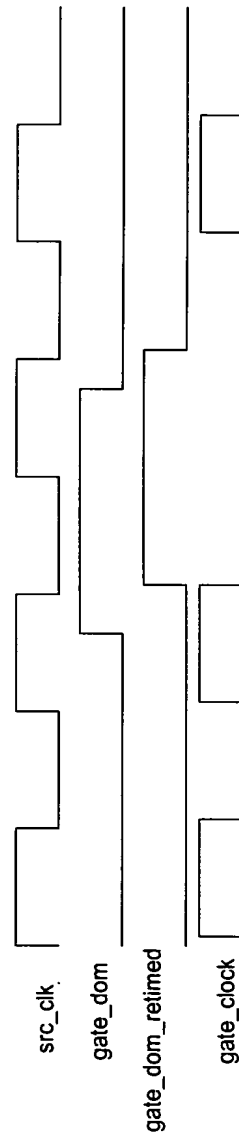
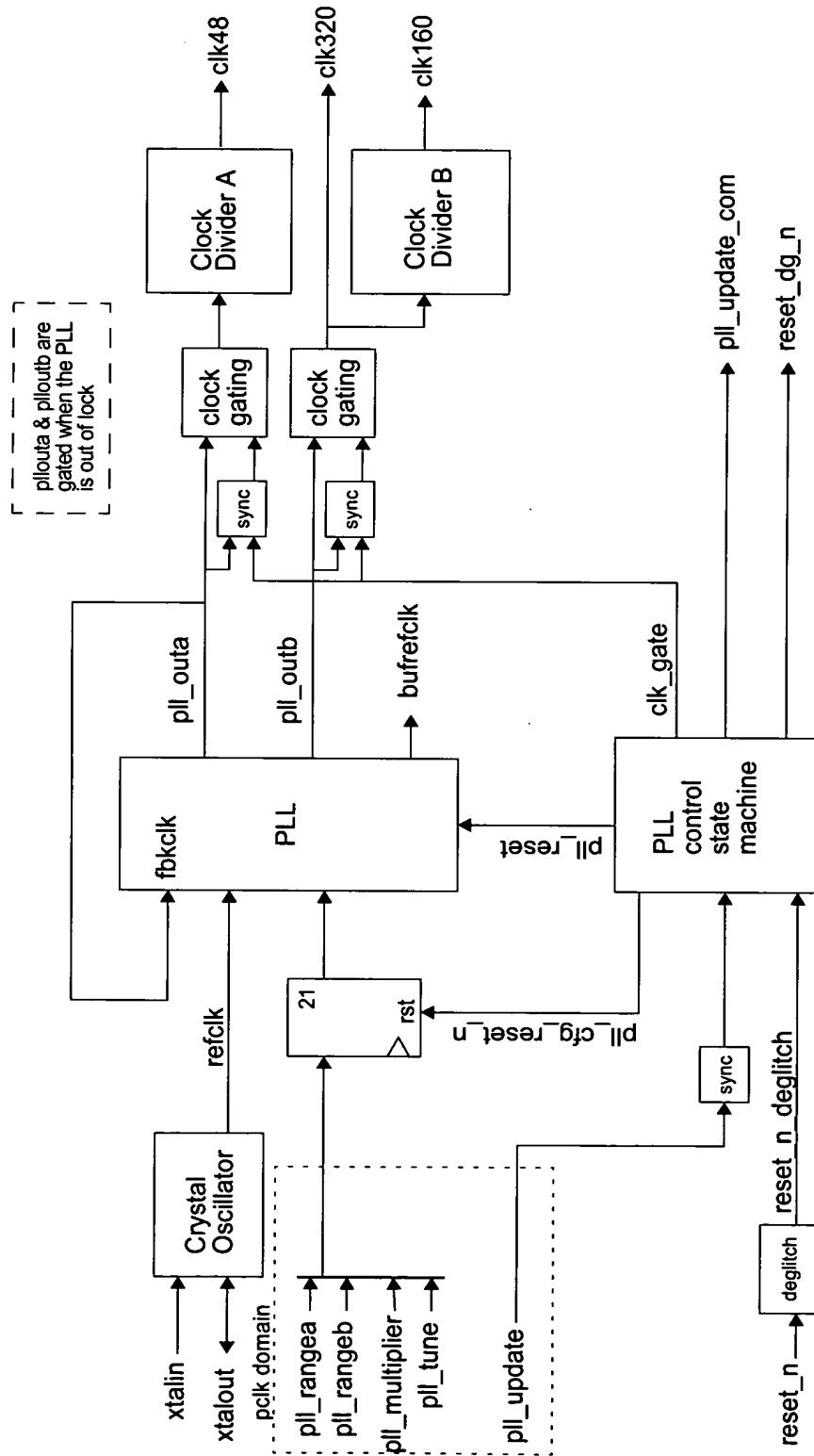


FIG. 71



Note: All logic clocked on `bufrefclk` unless otherwise indicated

FIG. 72

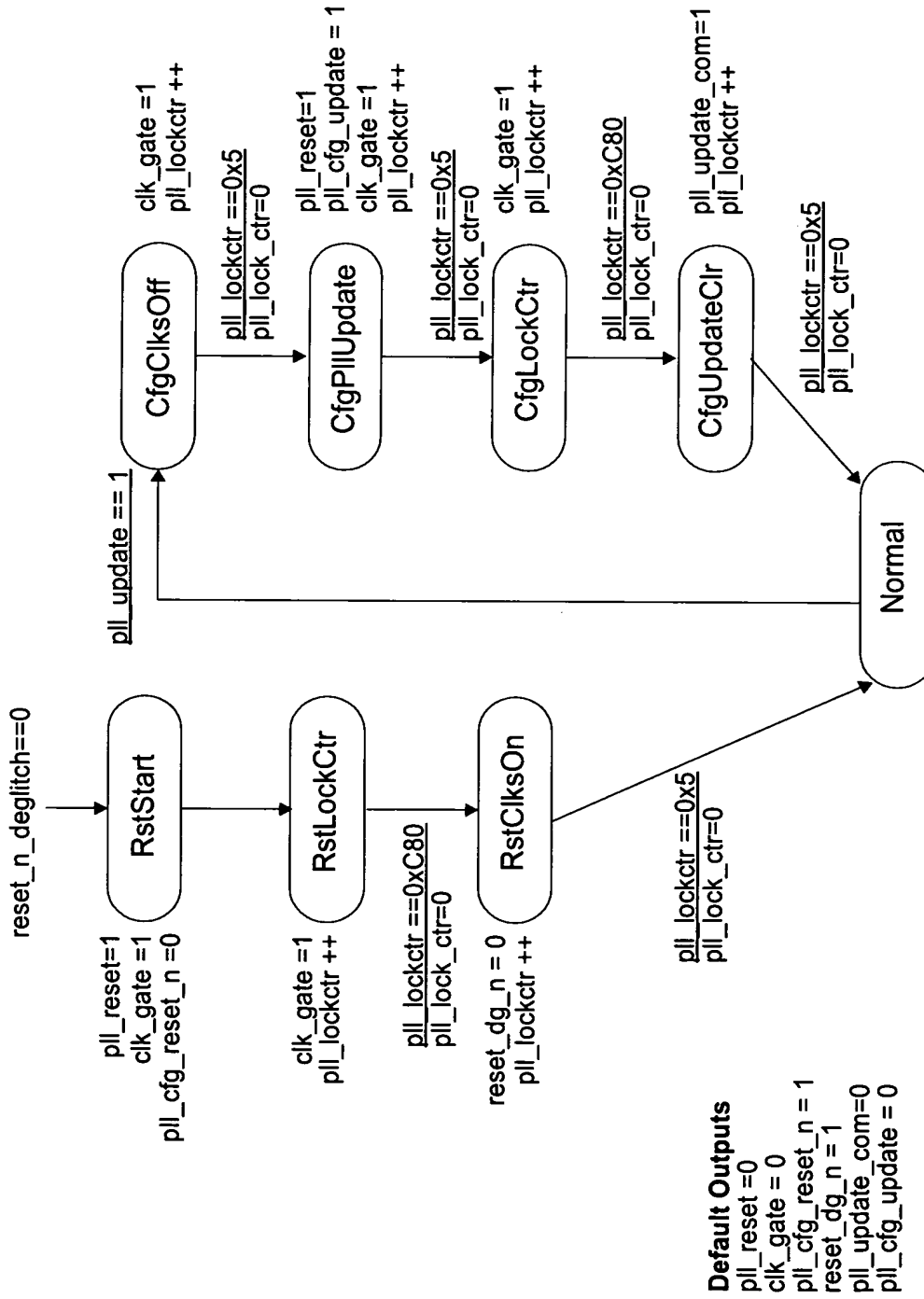


FIG. 73

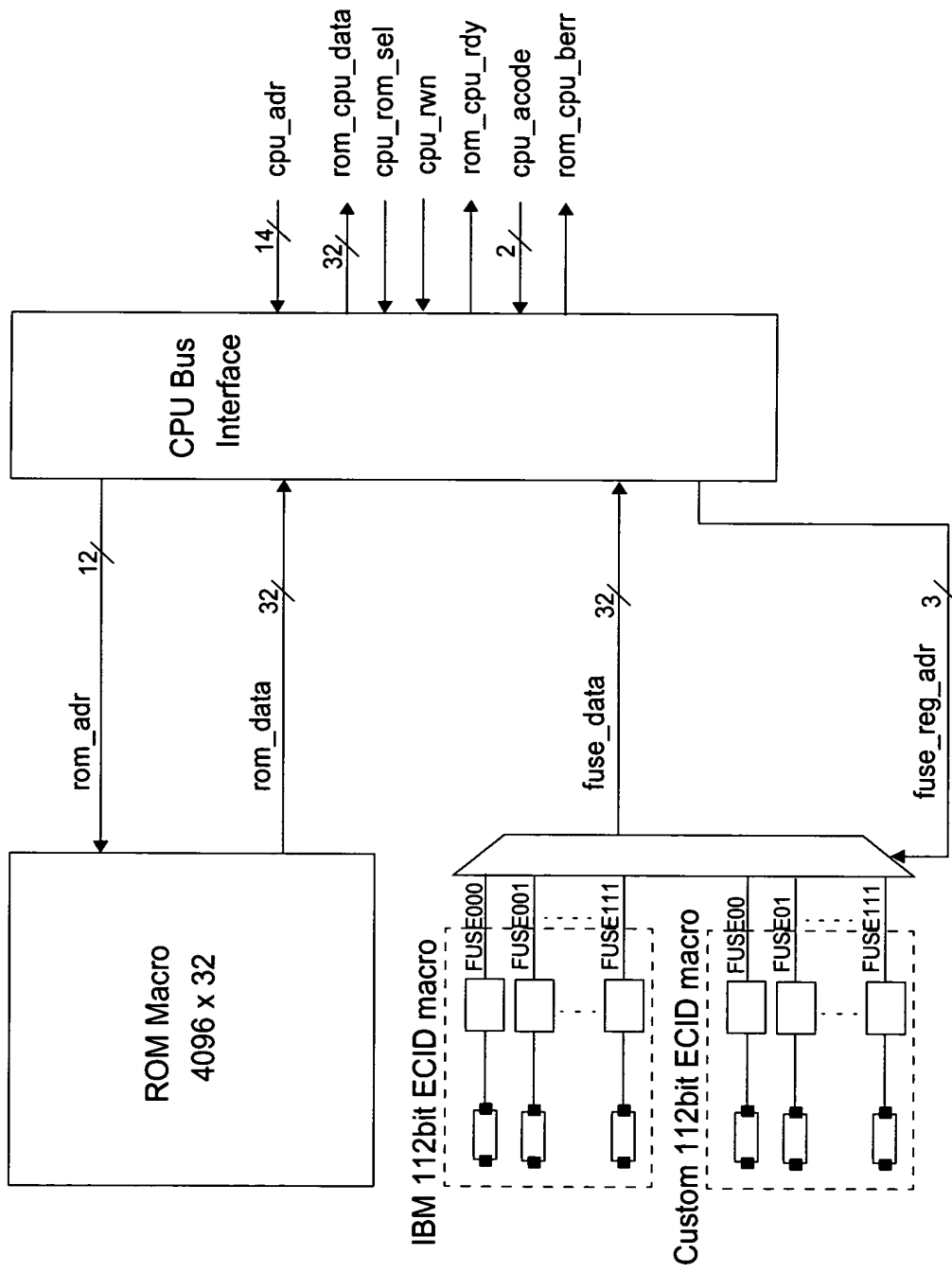


FIG. 74



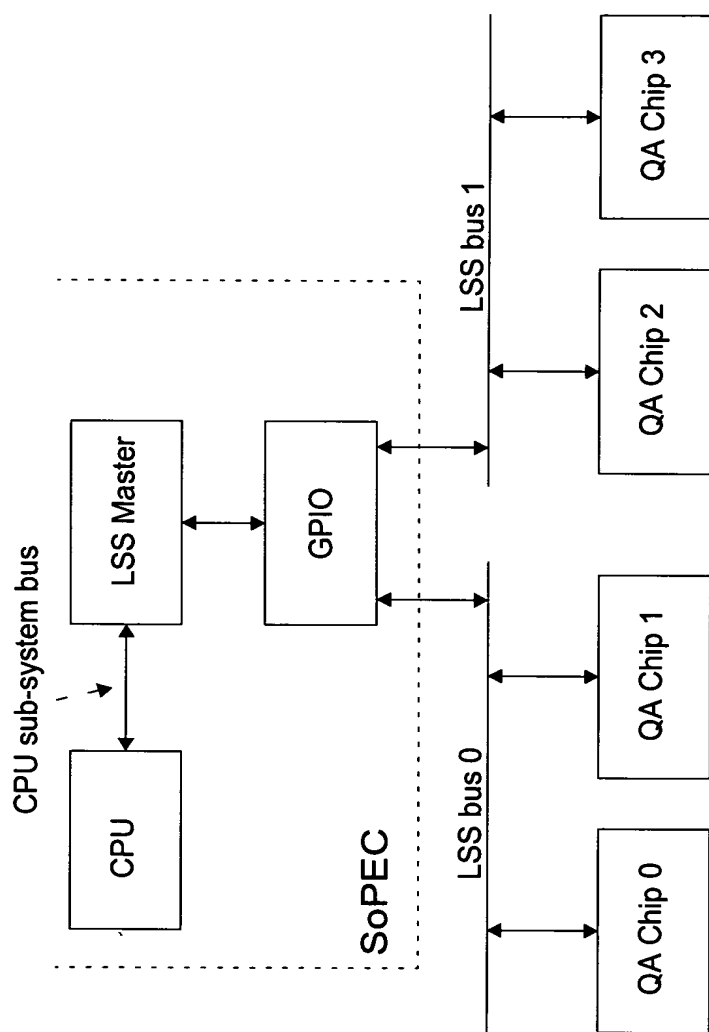


FIG. 75

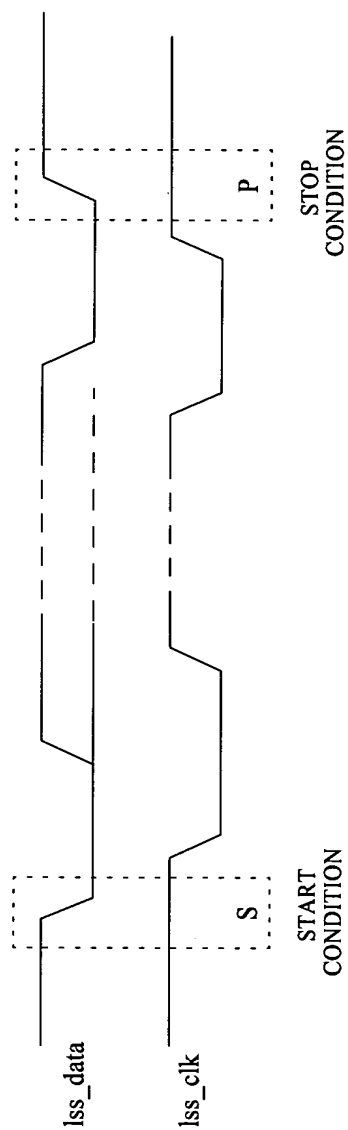


FIG. 76

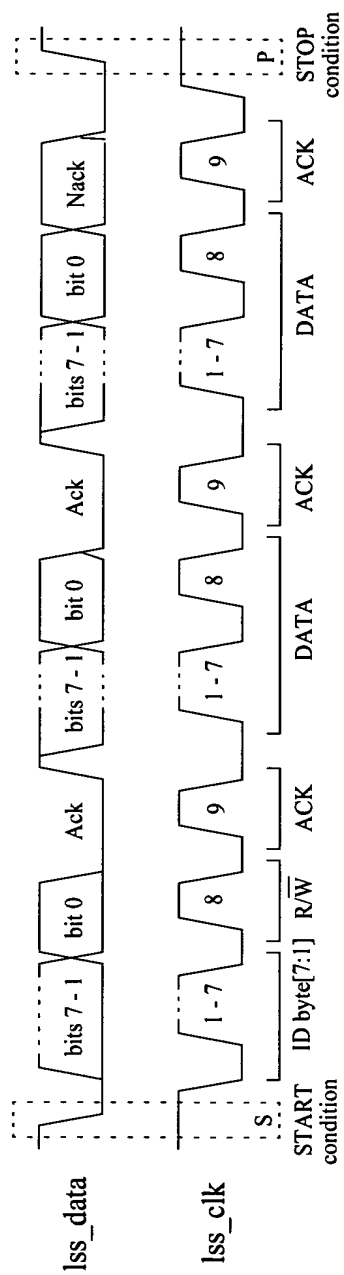


FIG. 77

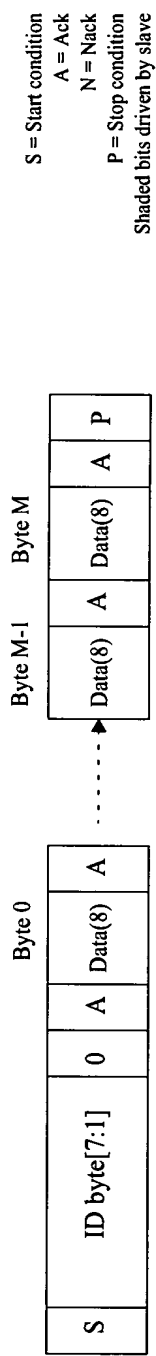


FIG. 78

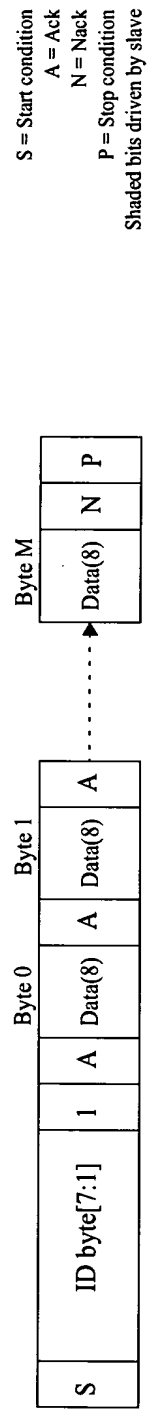


FIG. 79

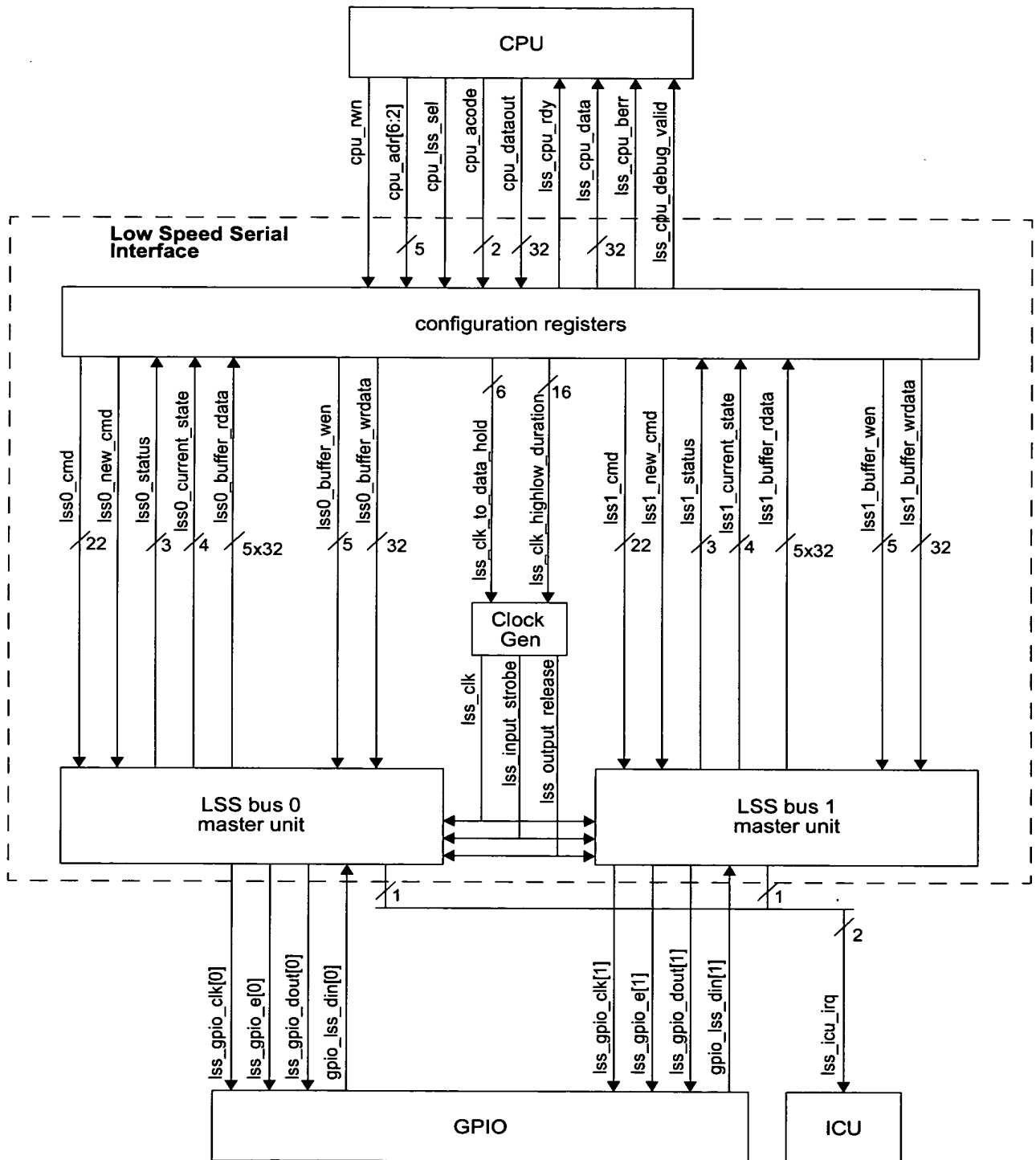


FIG. 80

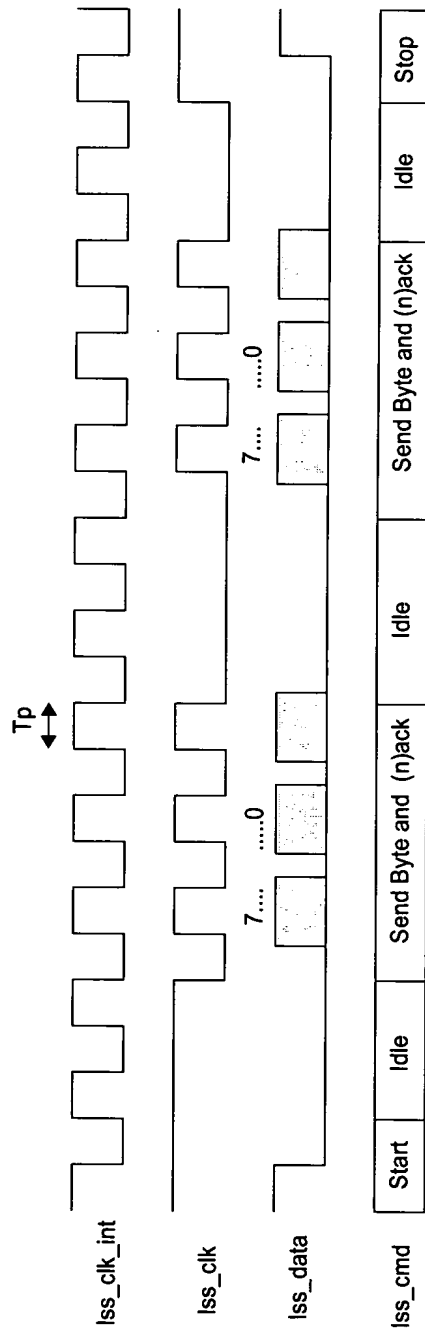


FIG. 81

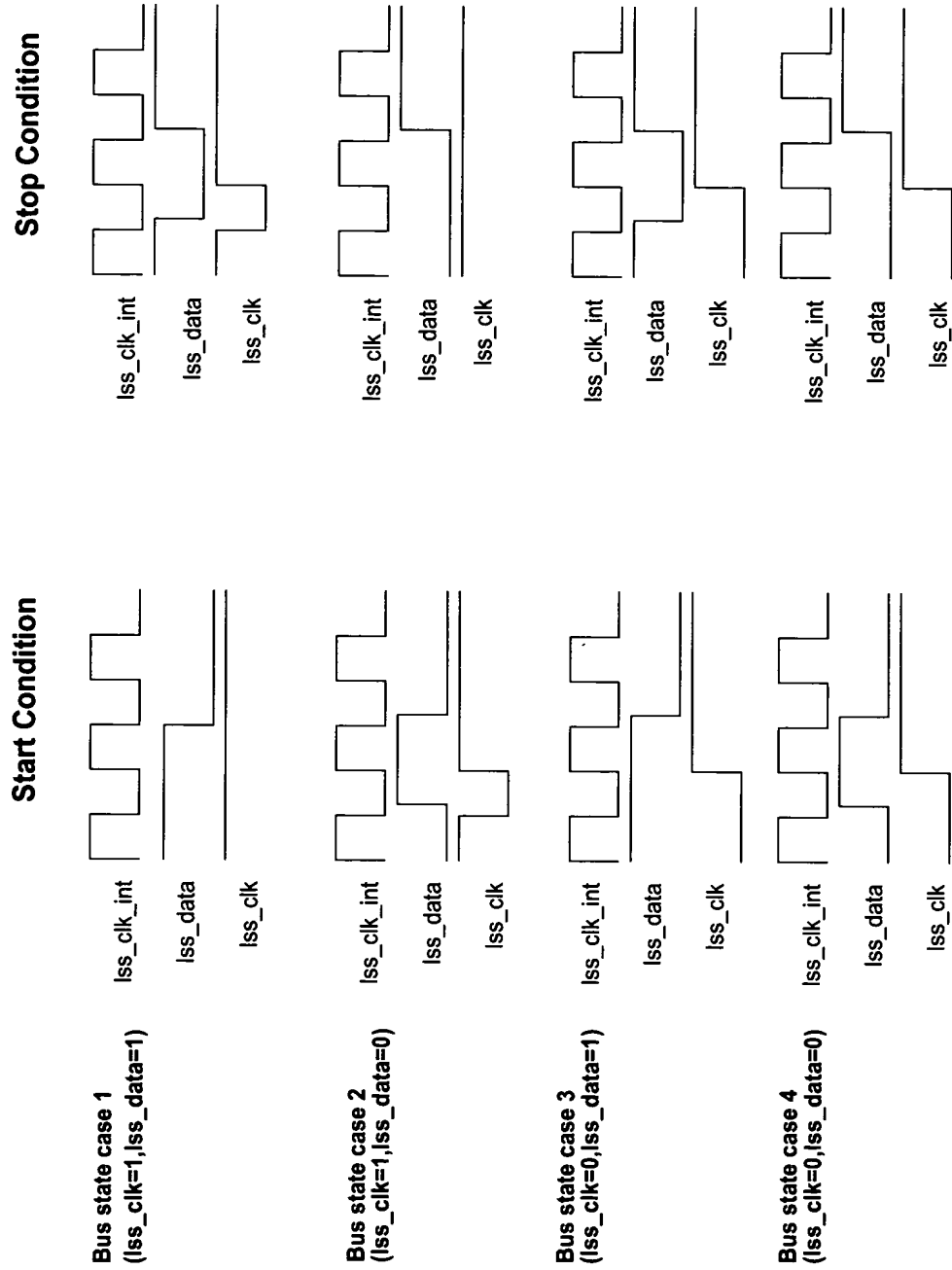


FIG. 82

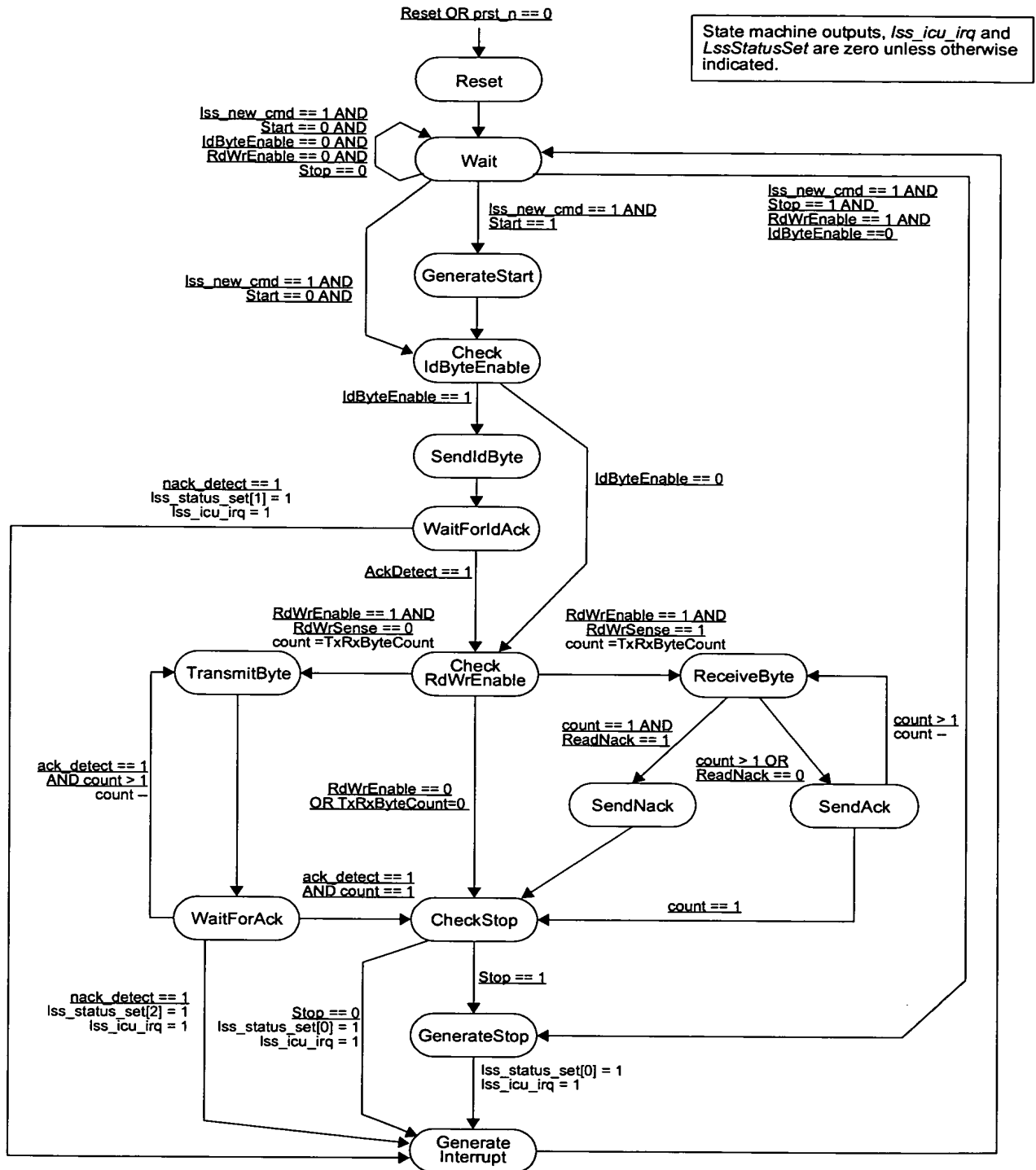


FIG. 83

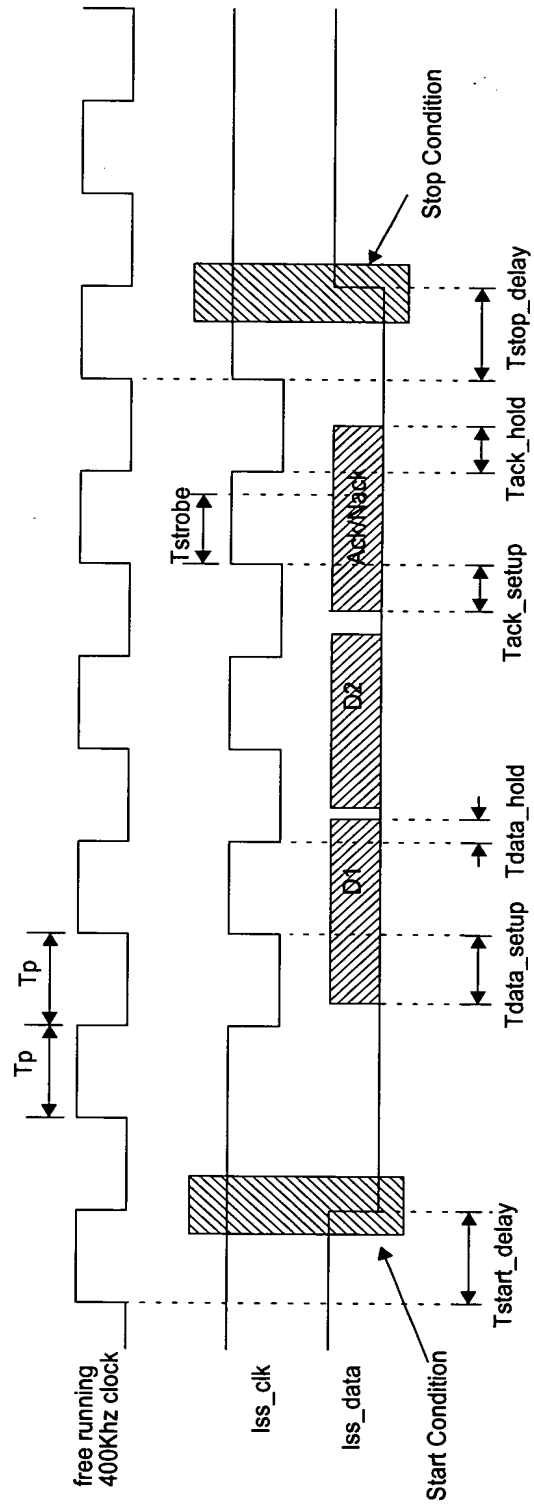


FIG. 84



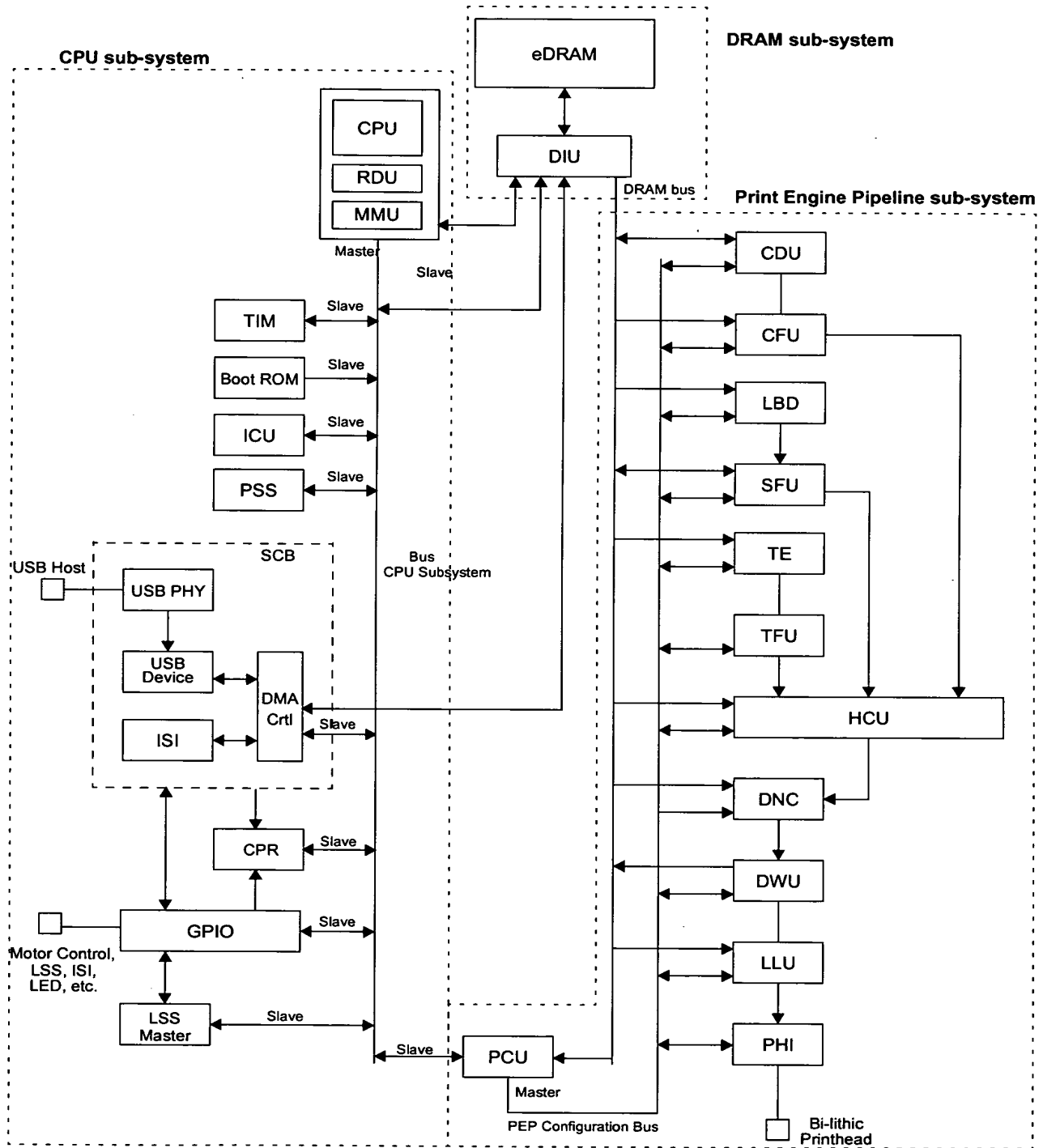


FIG. 85

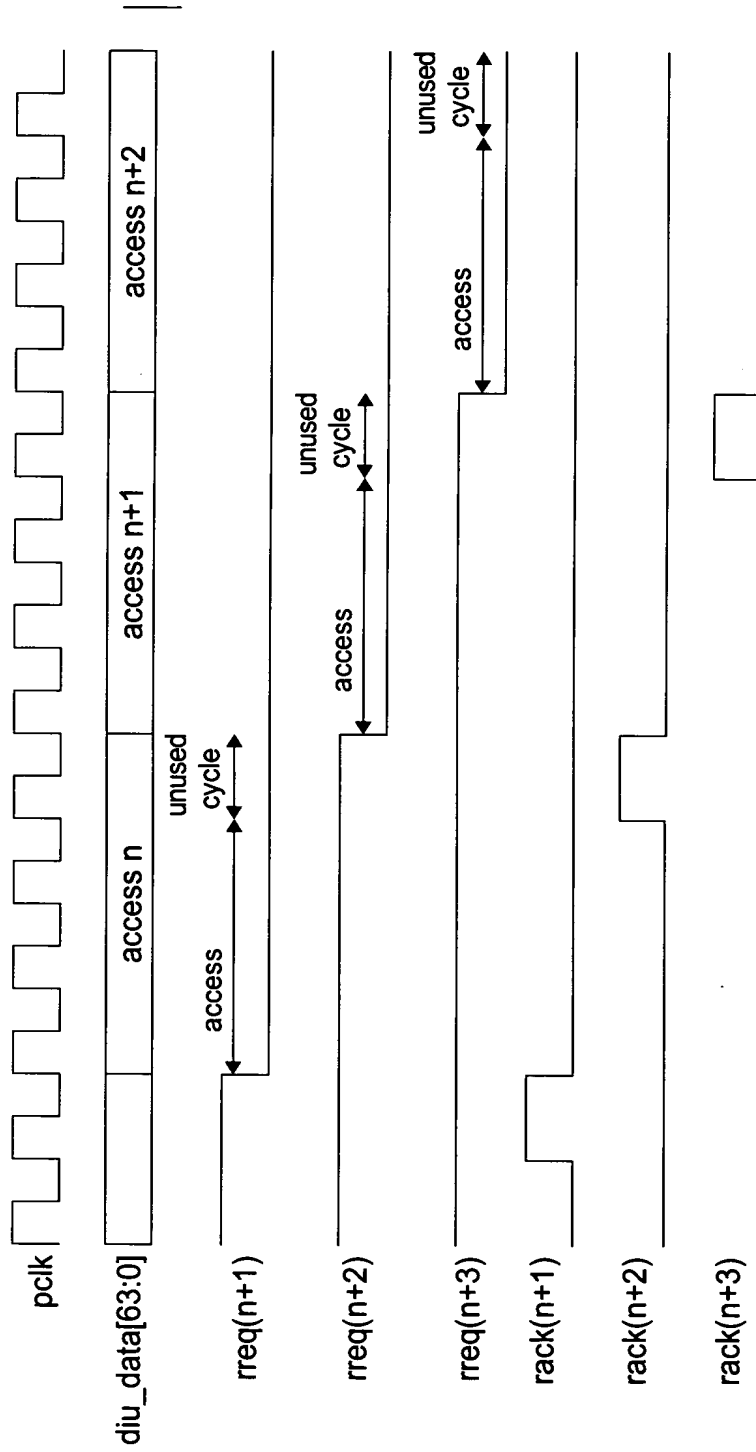


FIG. 86

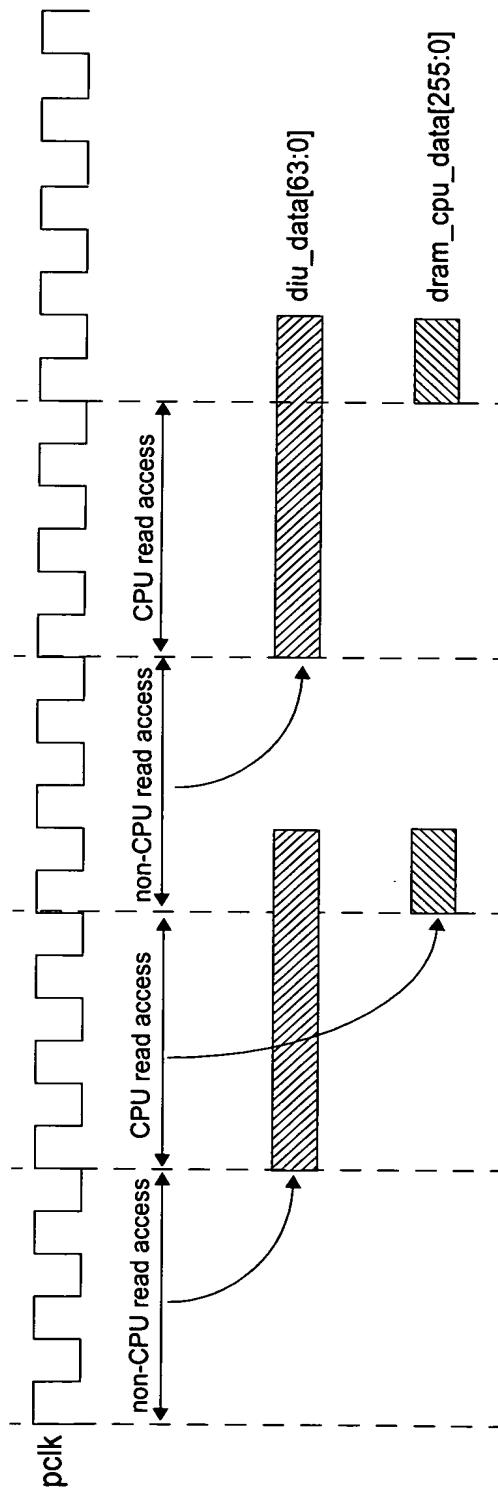


FIG. 87

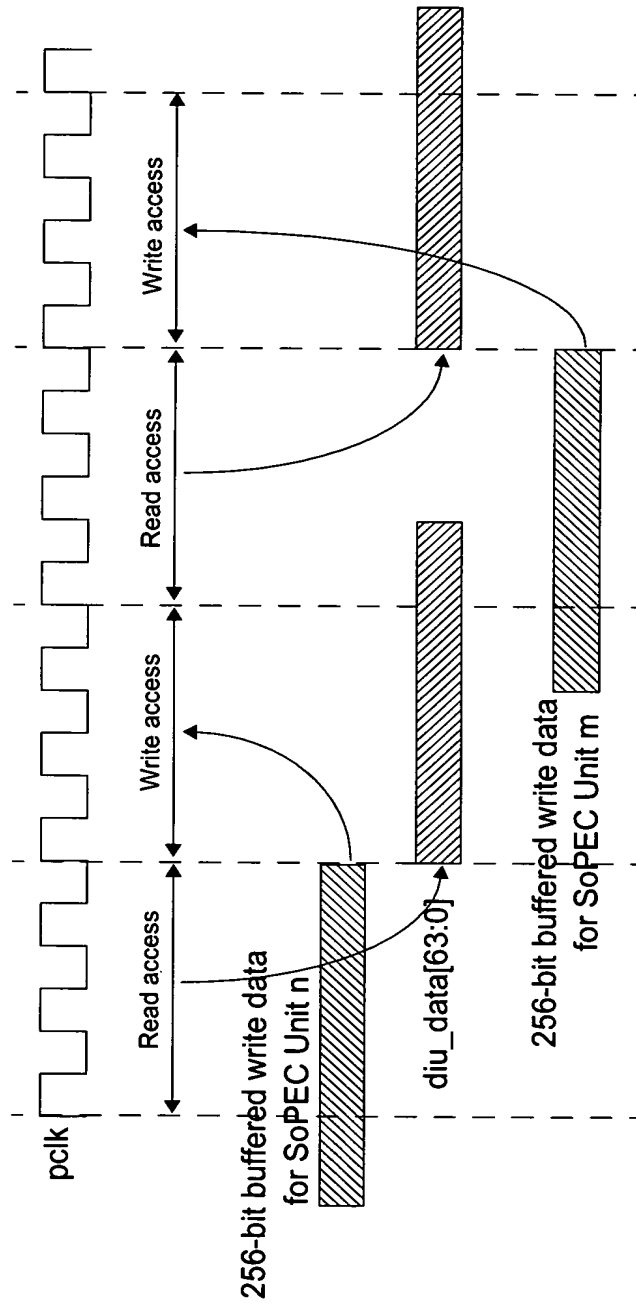


FIG. 88

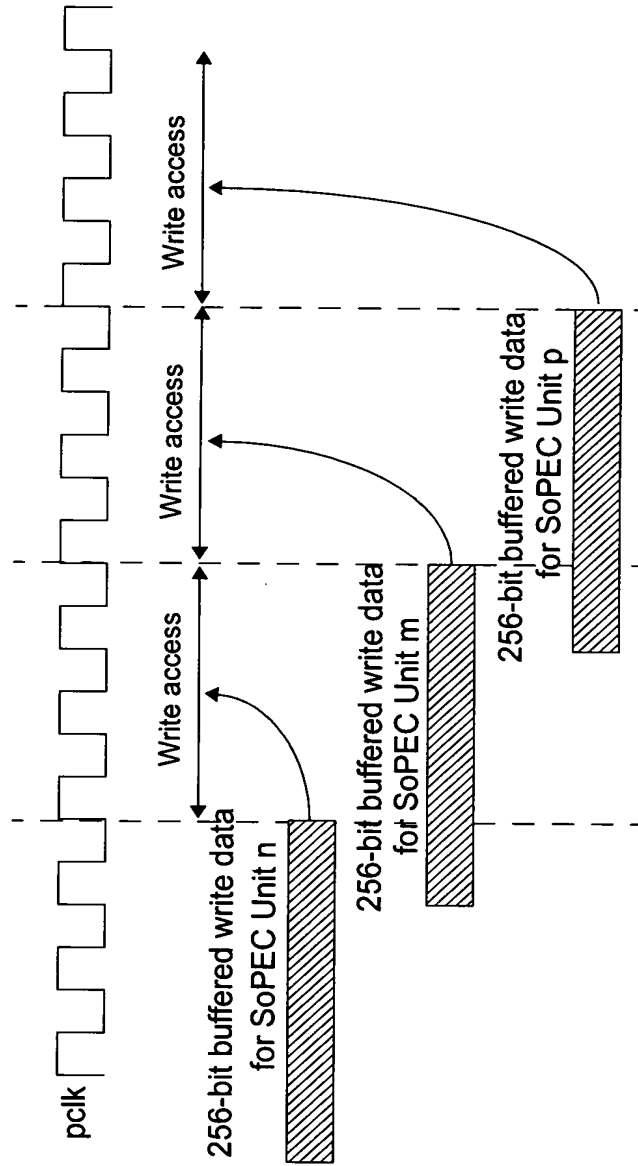


FIG. 89

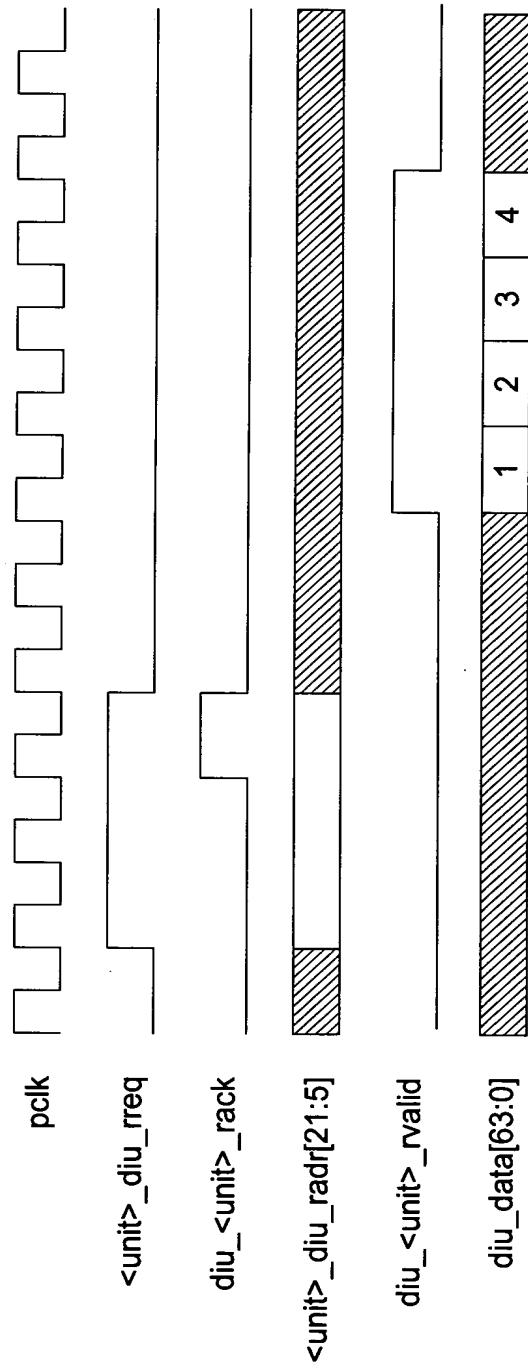


FIG. 90

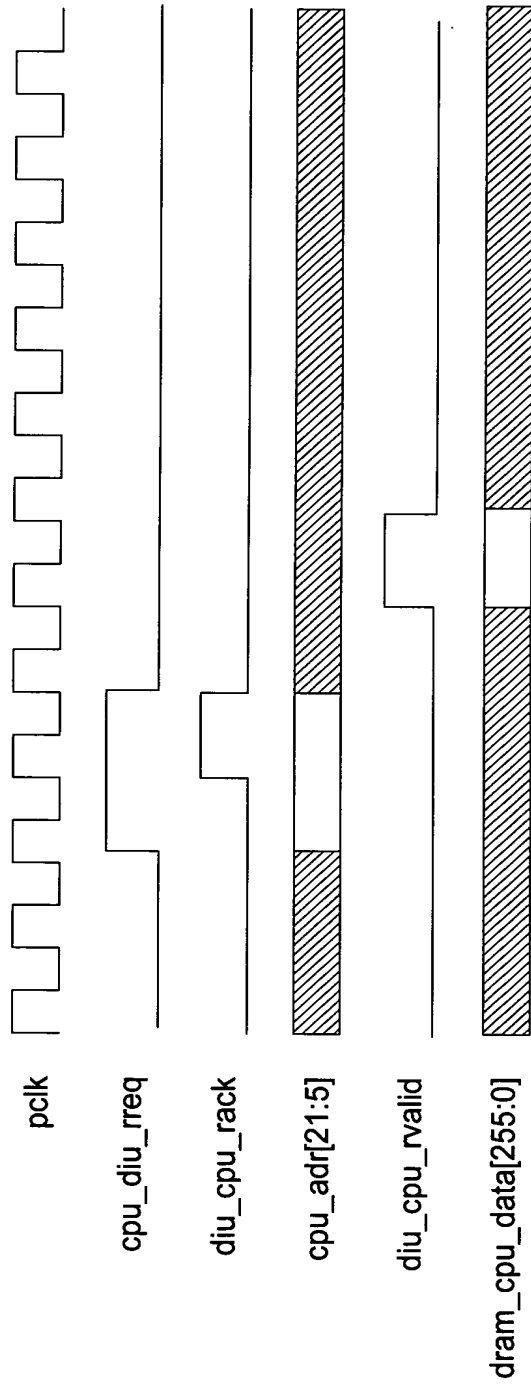


FIG. 91

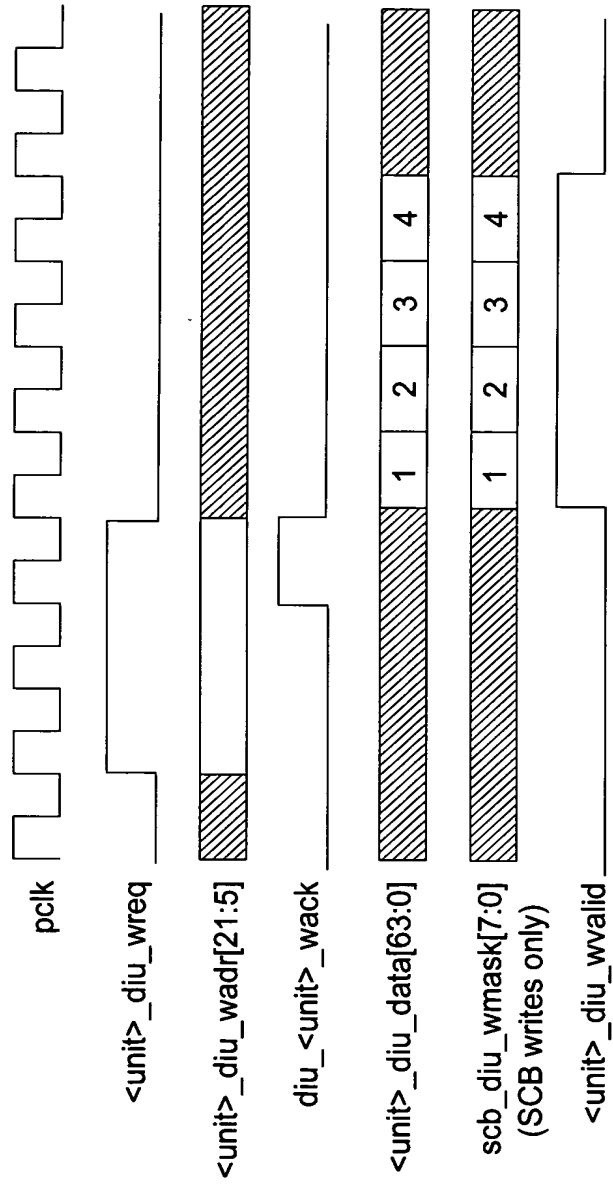


FIG. 92



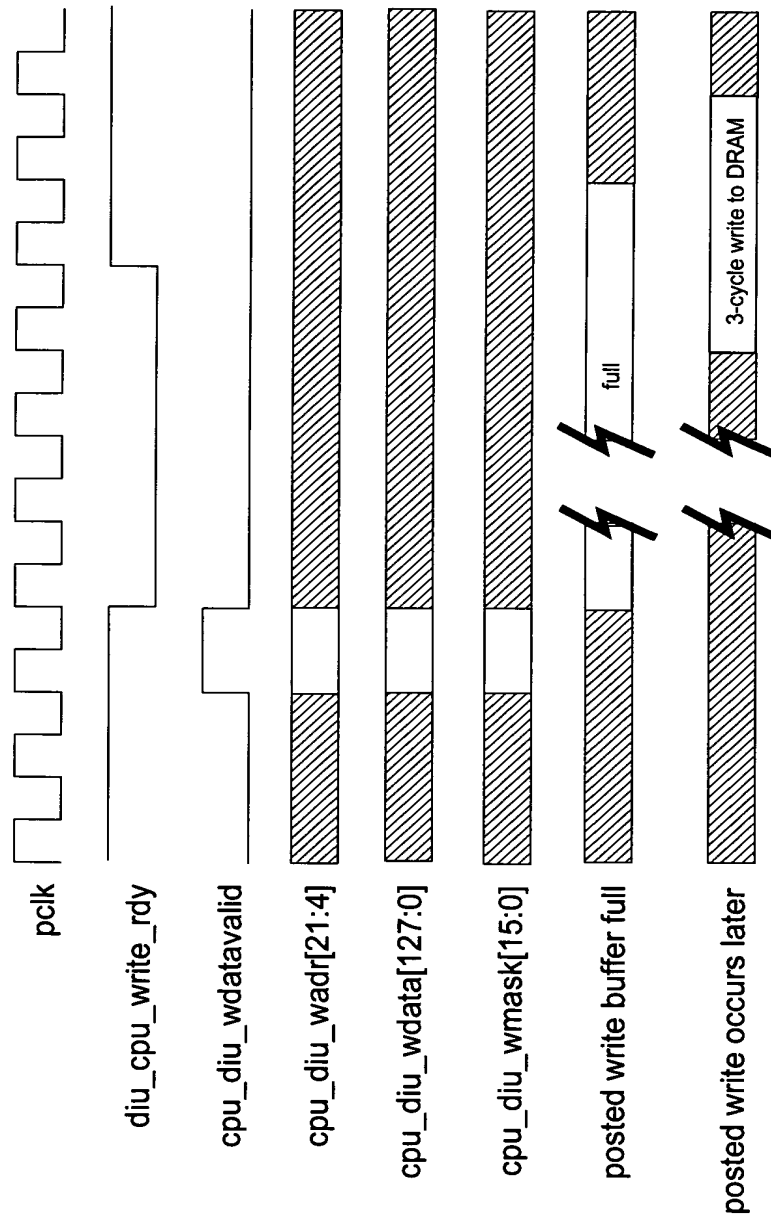


FIG. 93

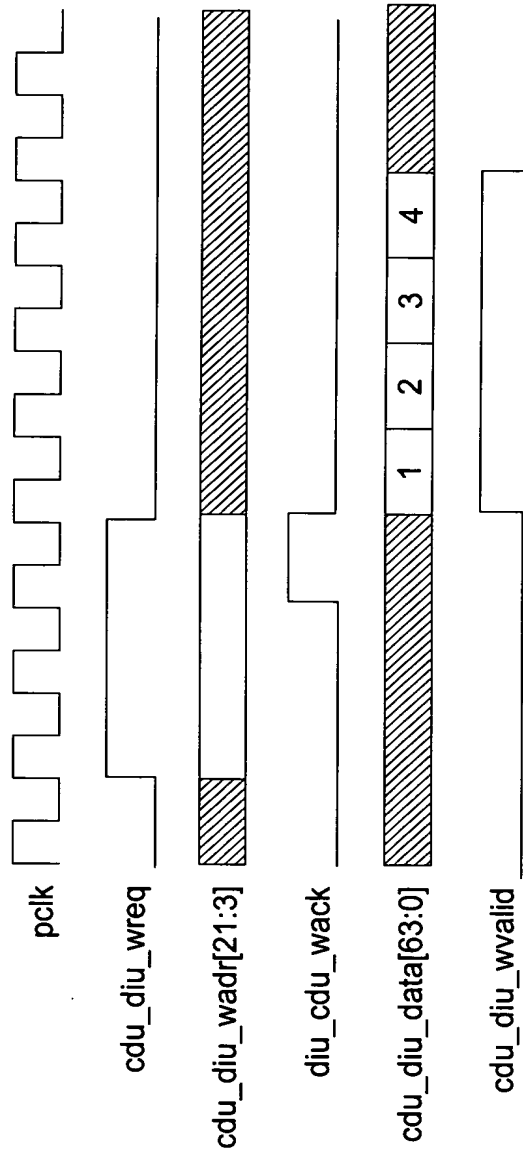
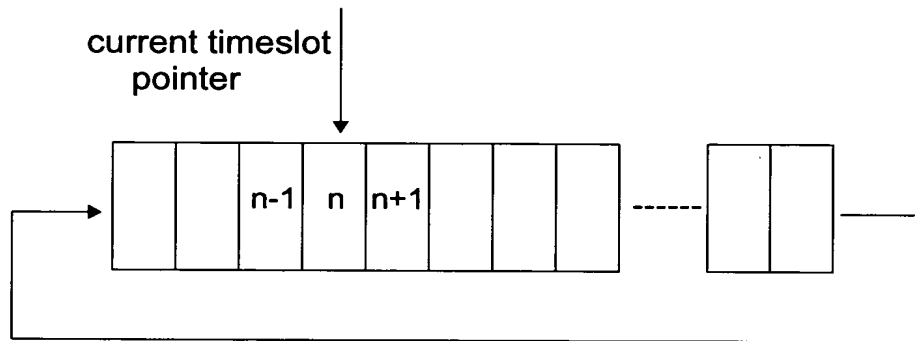
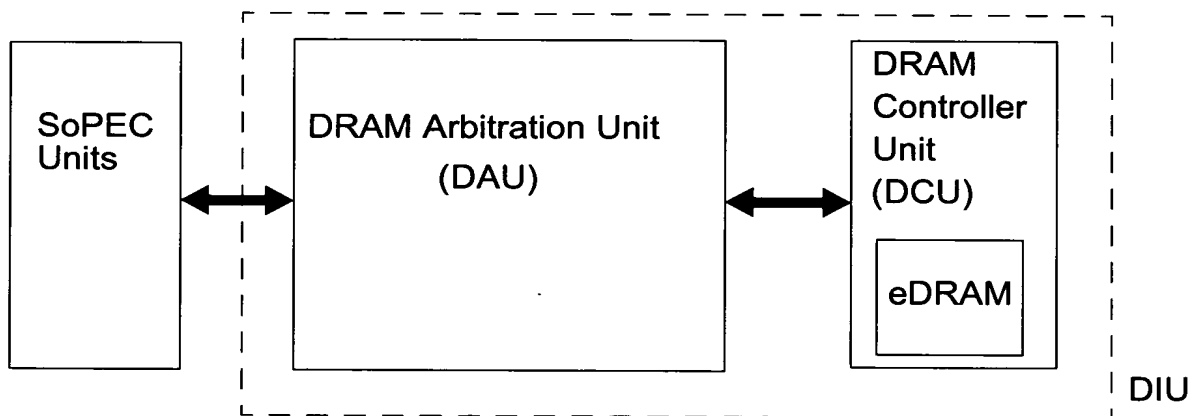
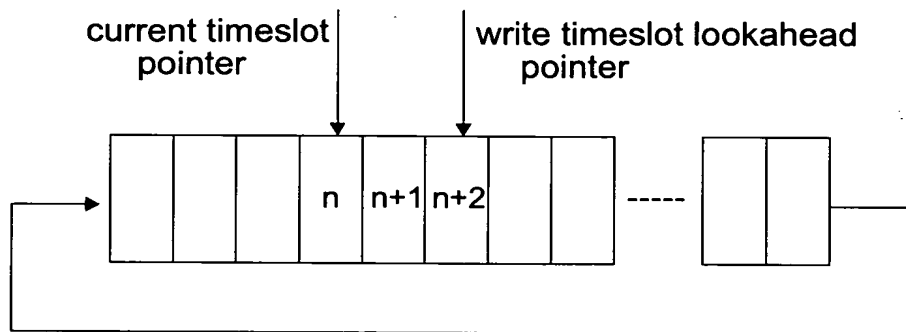
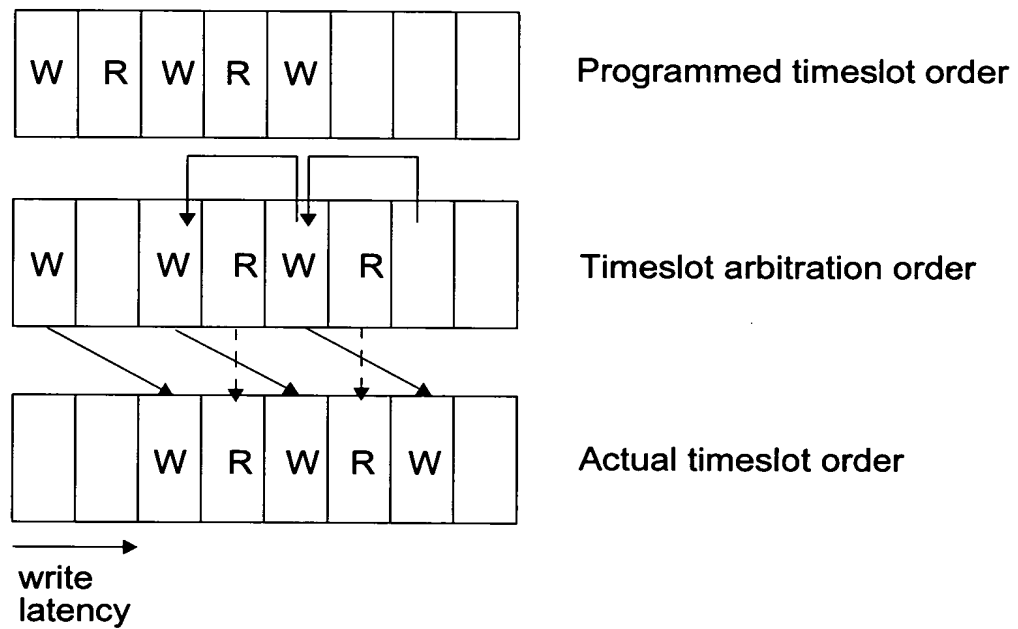


FIG. 94

*FIG. 95**FIG. 100*

*FIG. 96**FIG. 97*

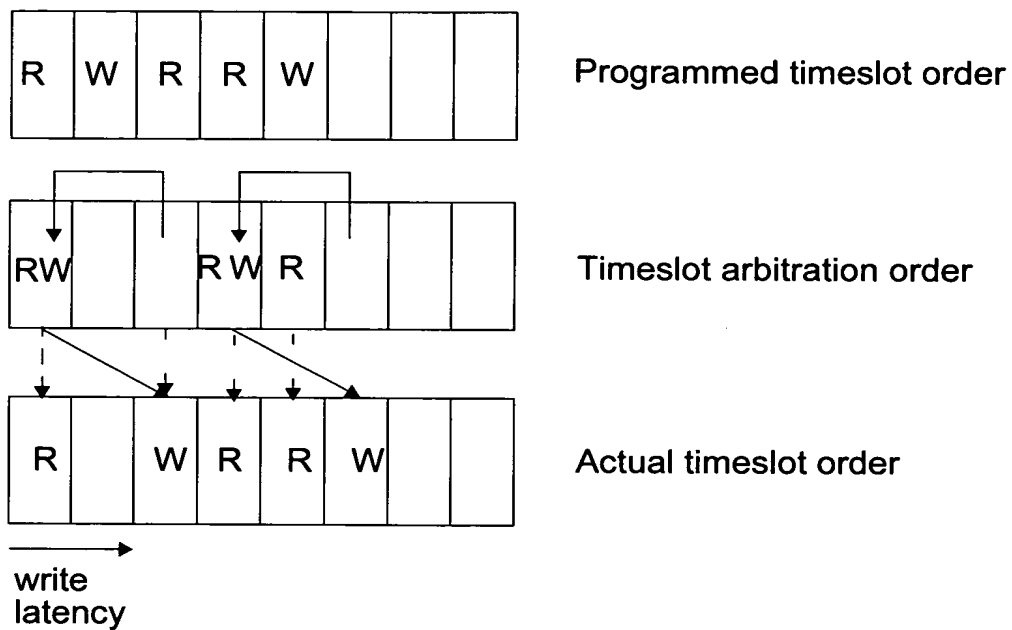


FIG. 98

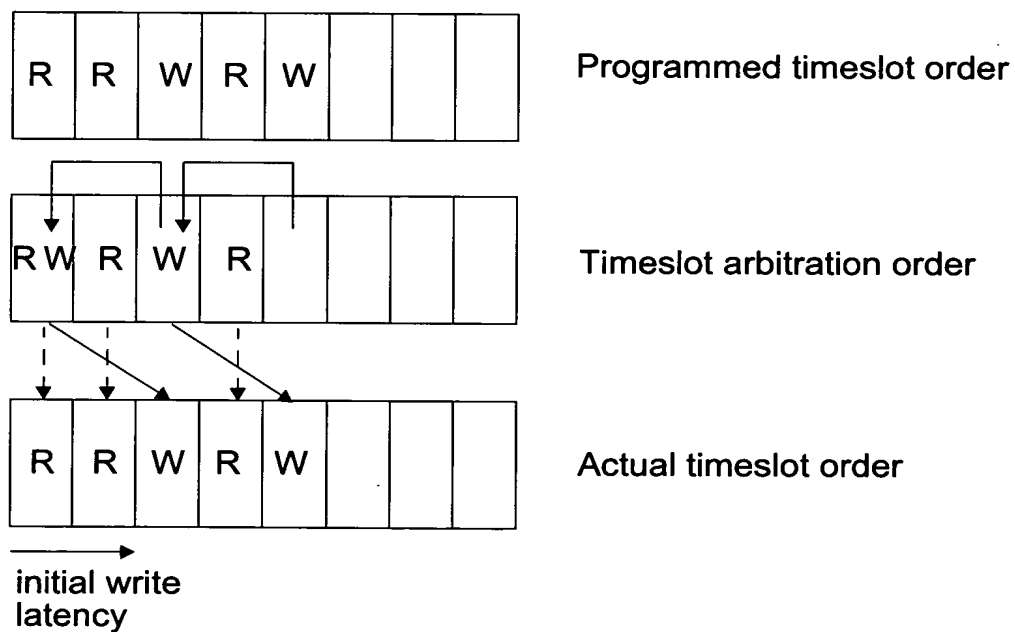


FIG. 99

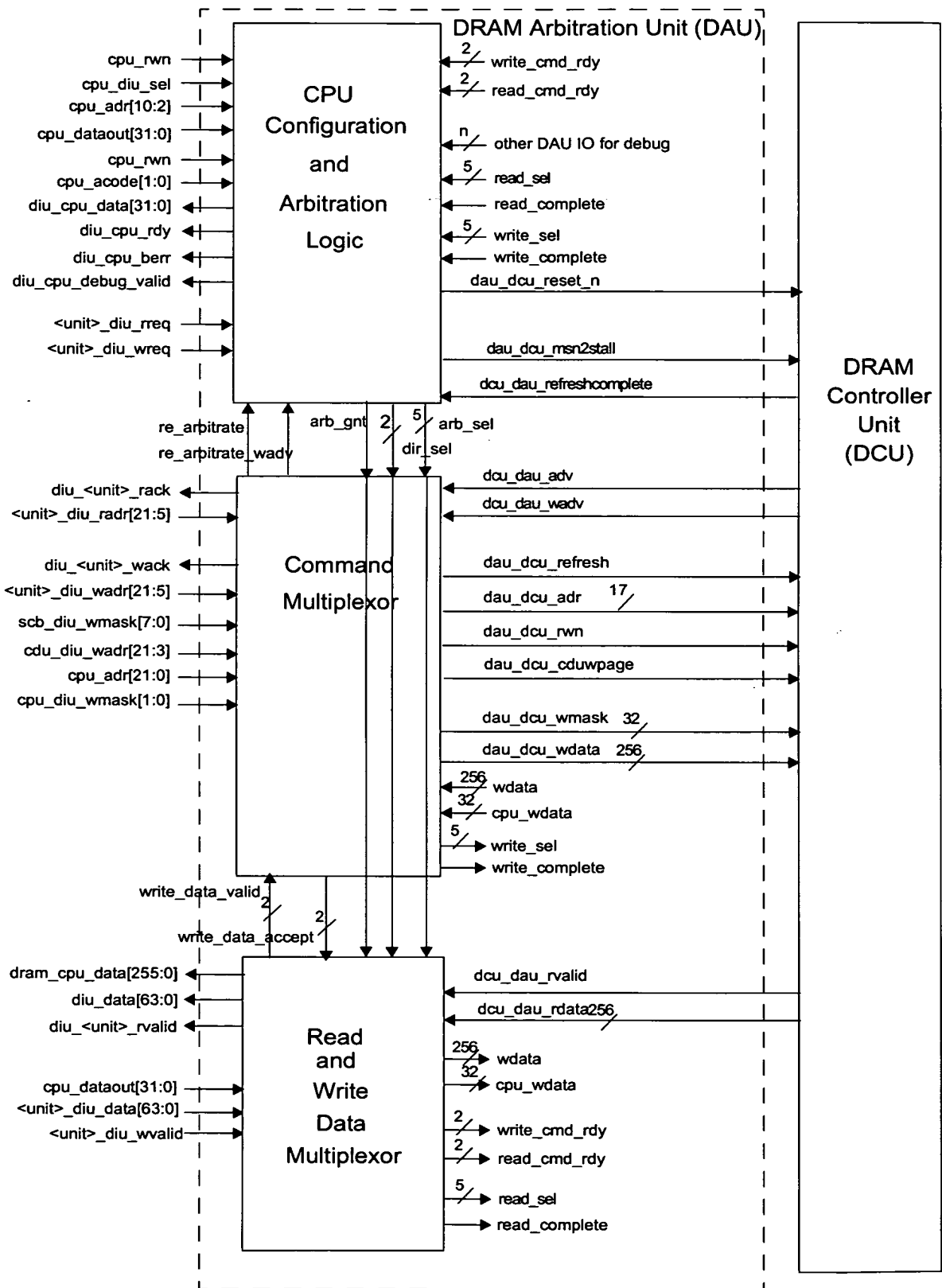


FIG. 101

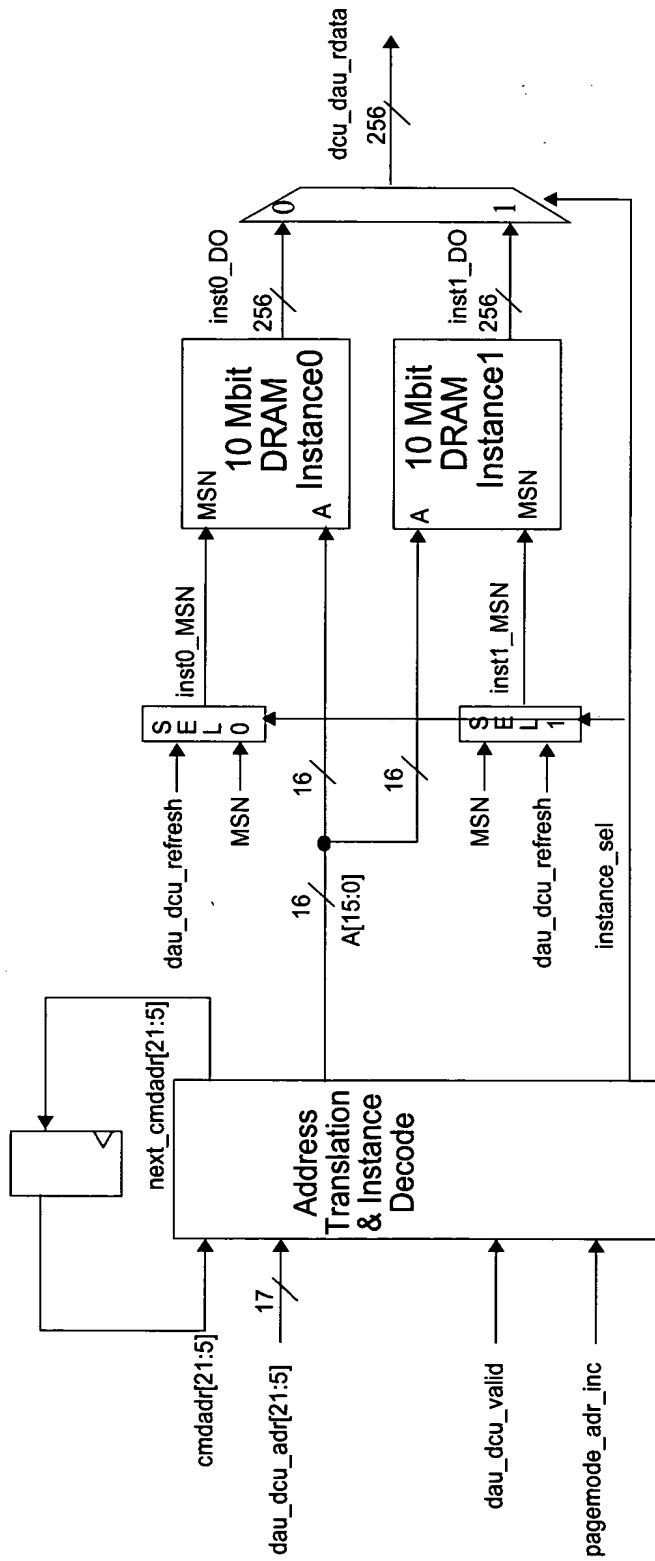


FIG. 102

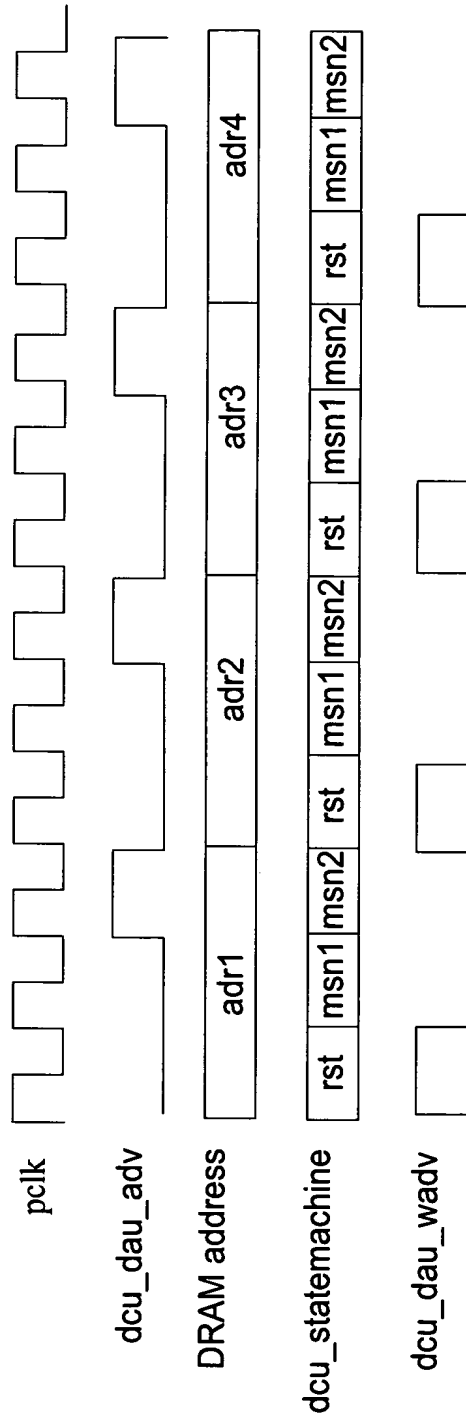


FIG. 103



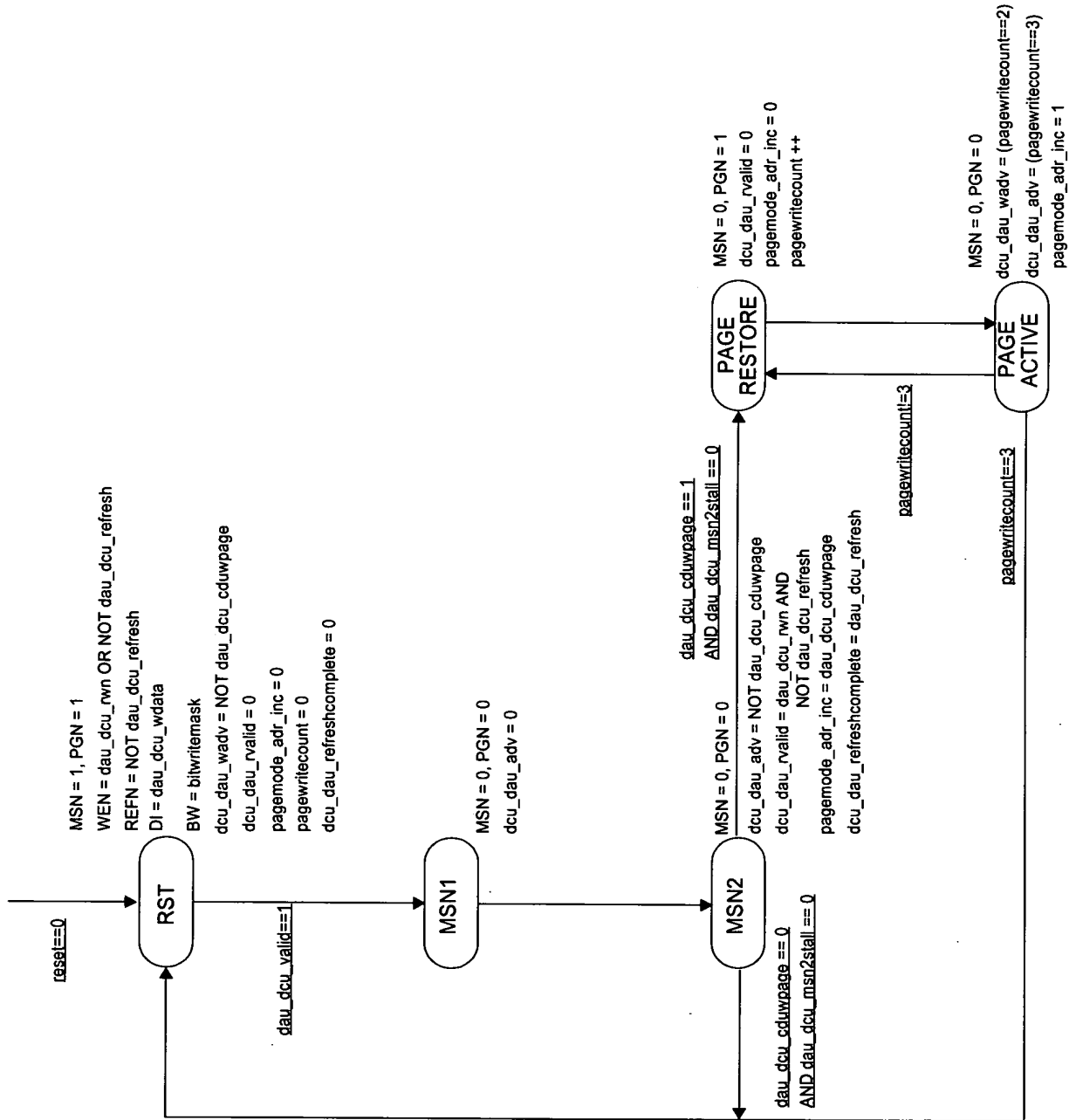


FIG. 104

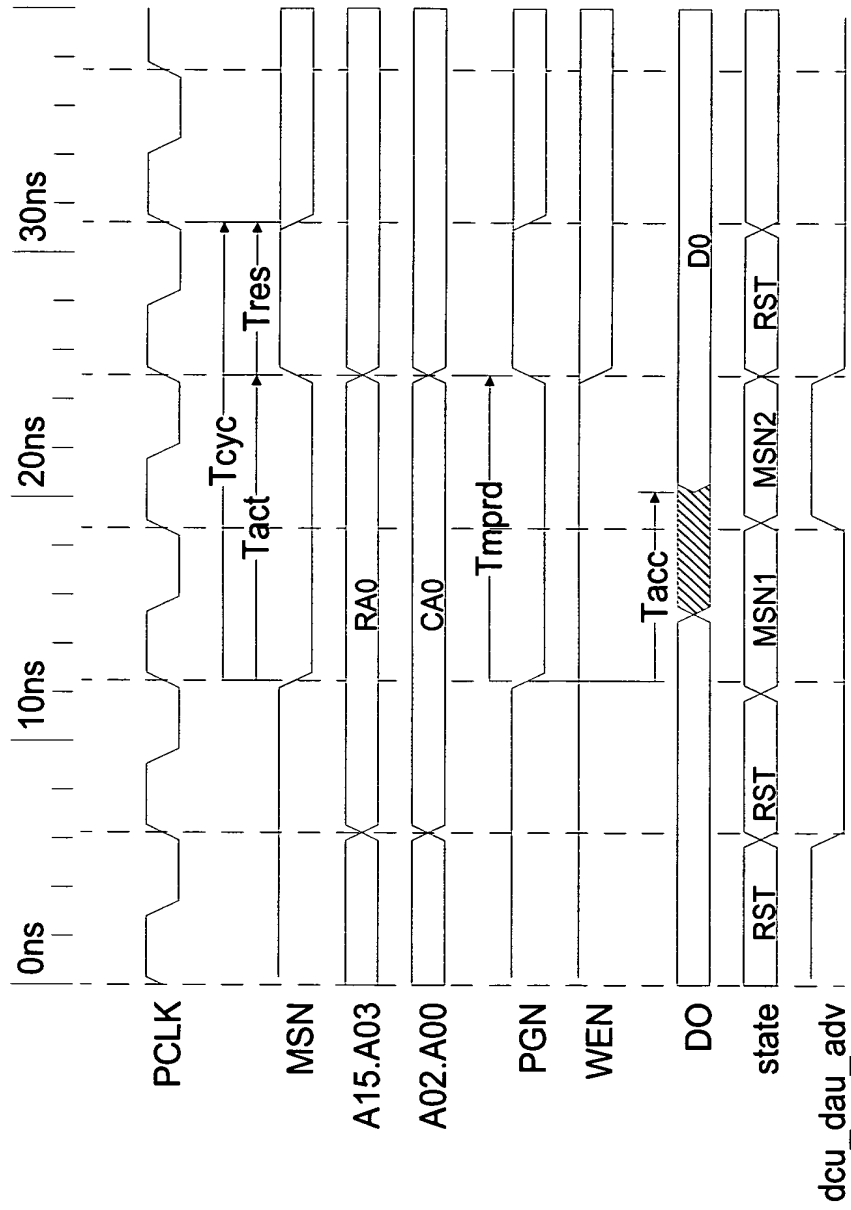


FIG. 105

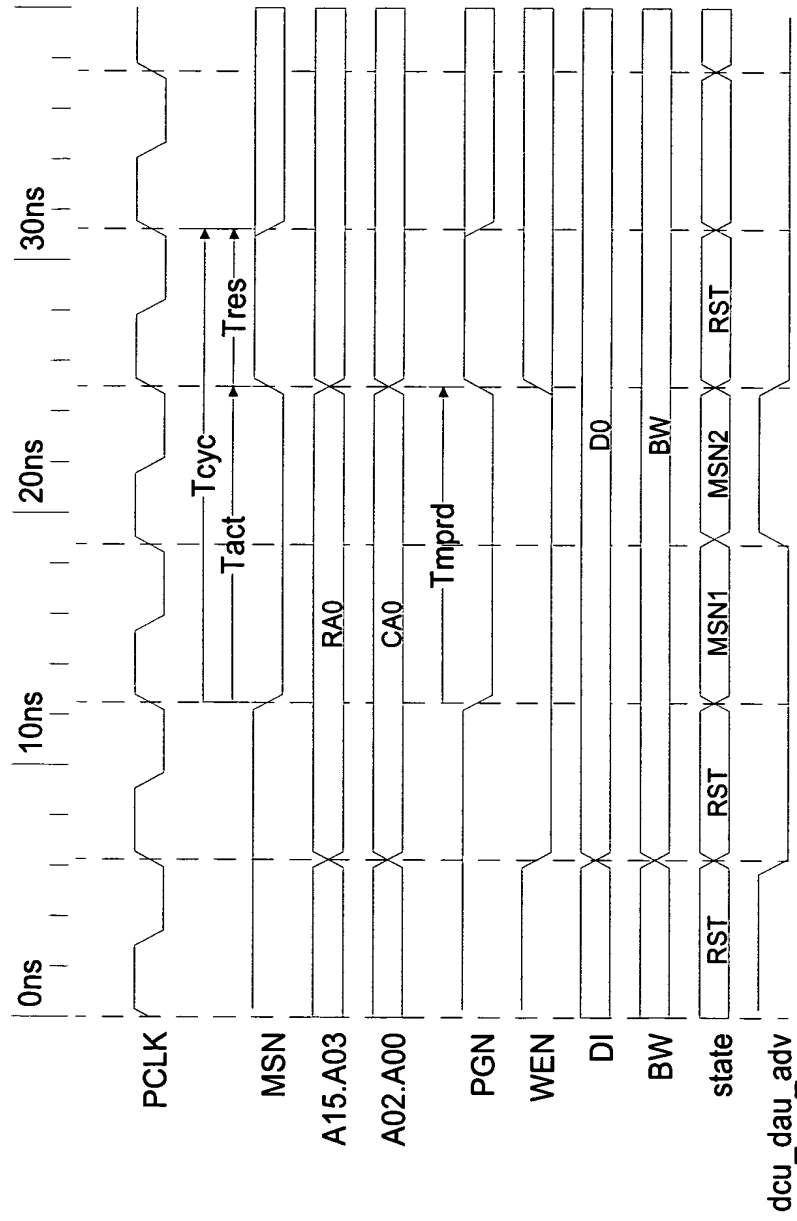


FIG. 106

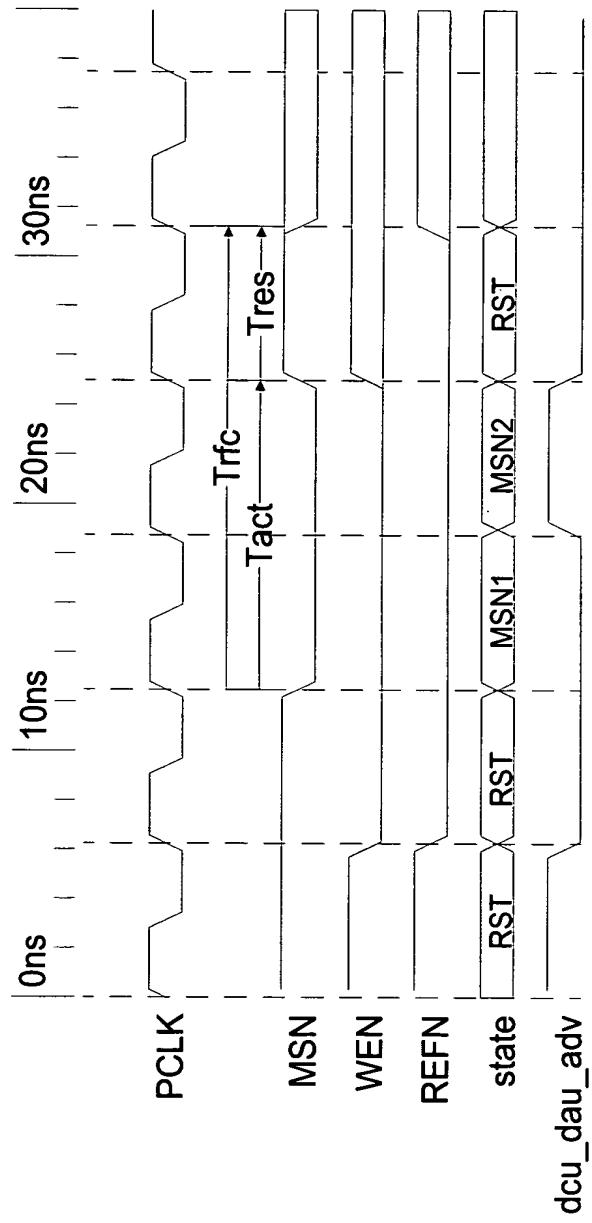


FIG. 107

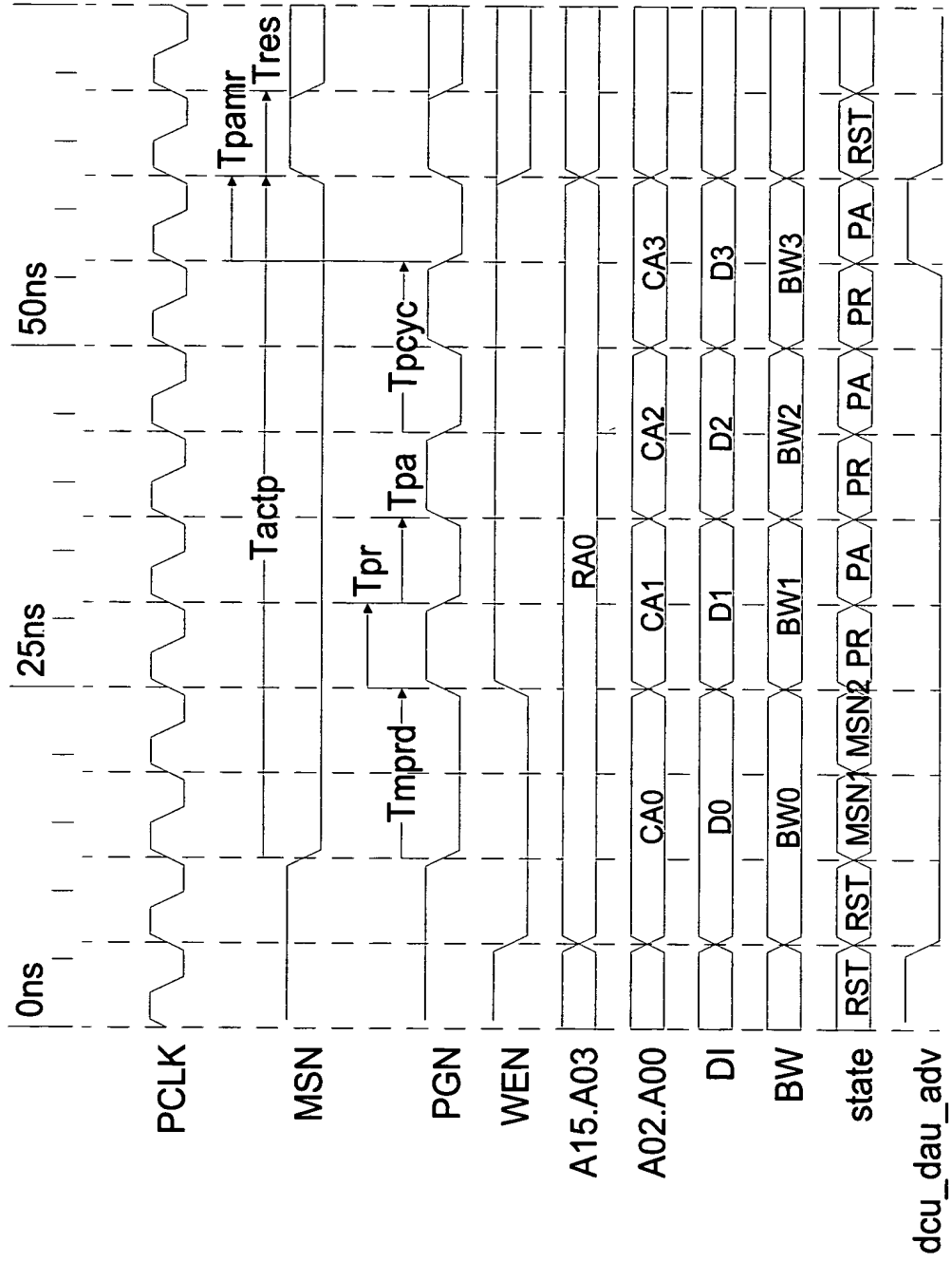


FIG. 108

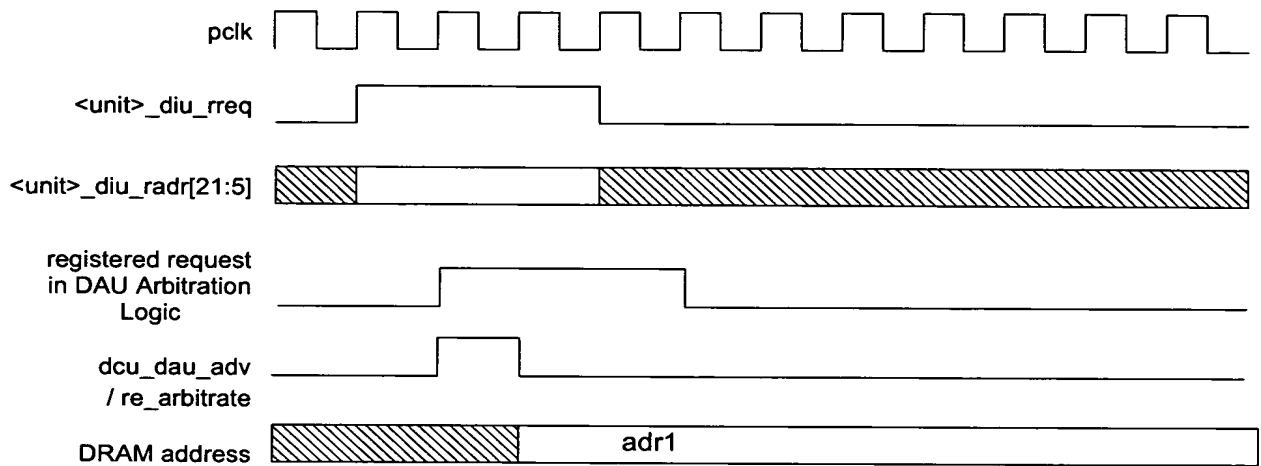
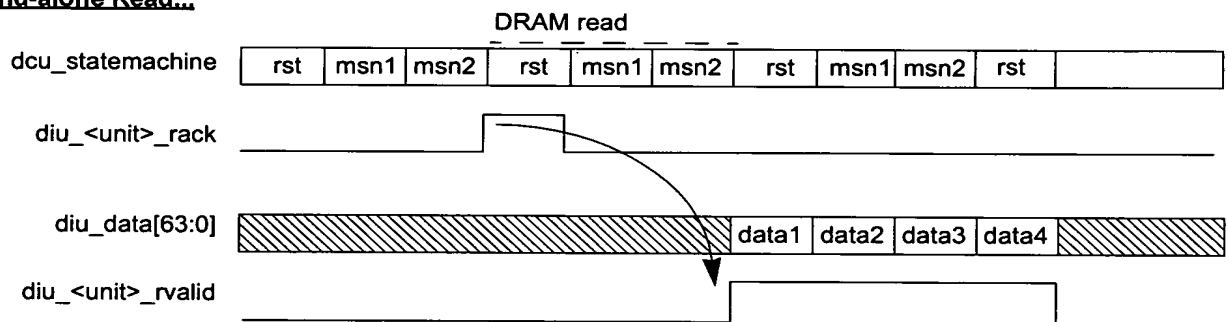
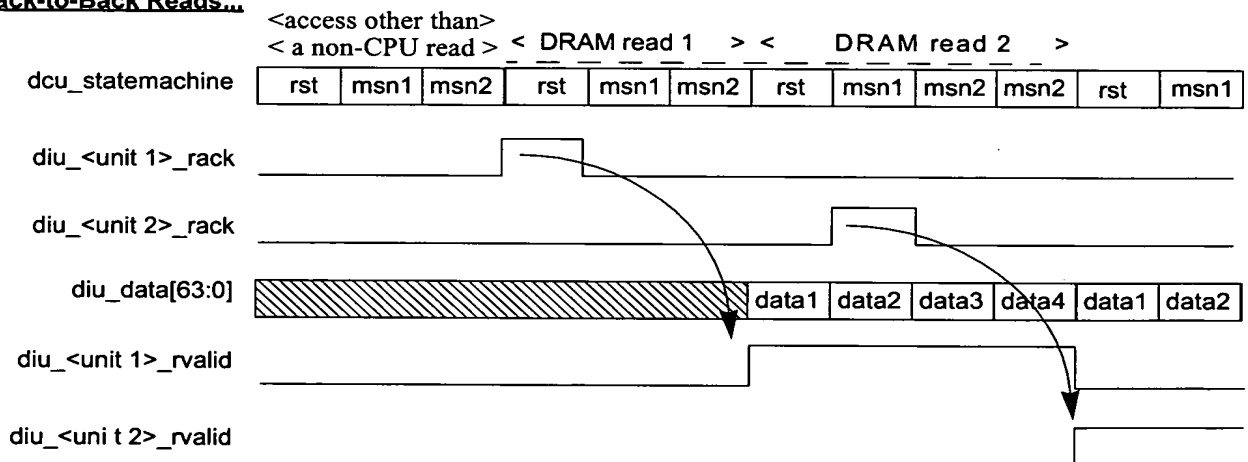
**Stand-alone Read...****Back-to-Back Reads...**

FIG. 109



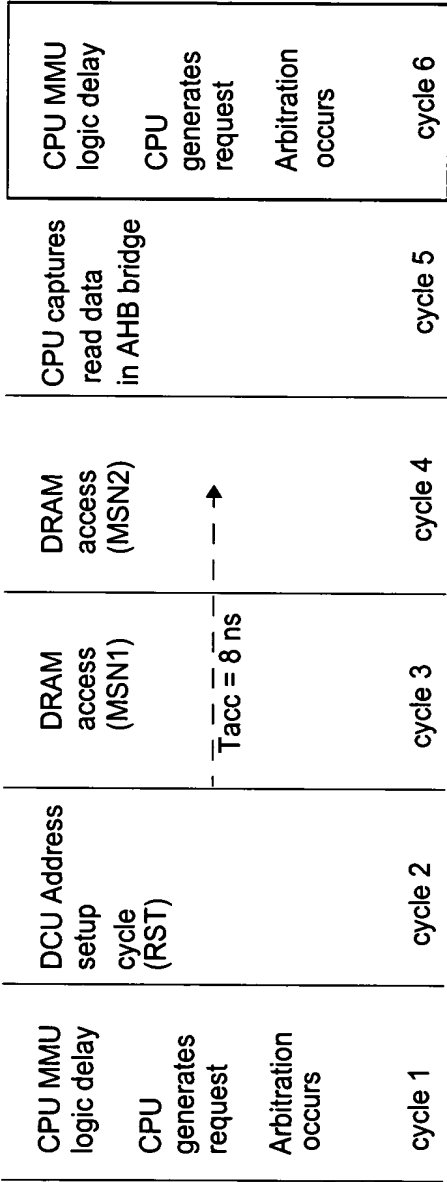


FIG. 111



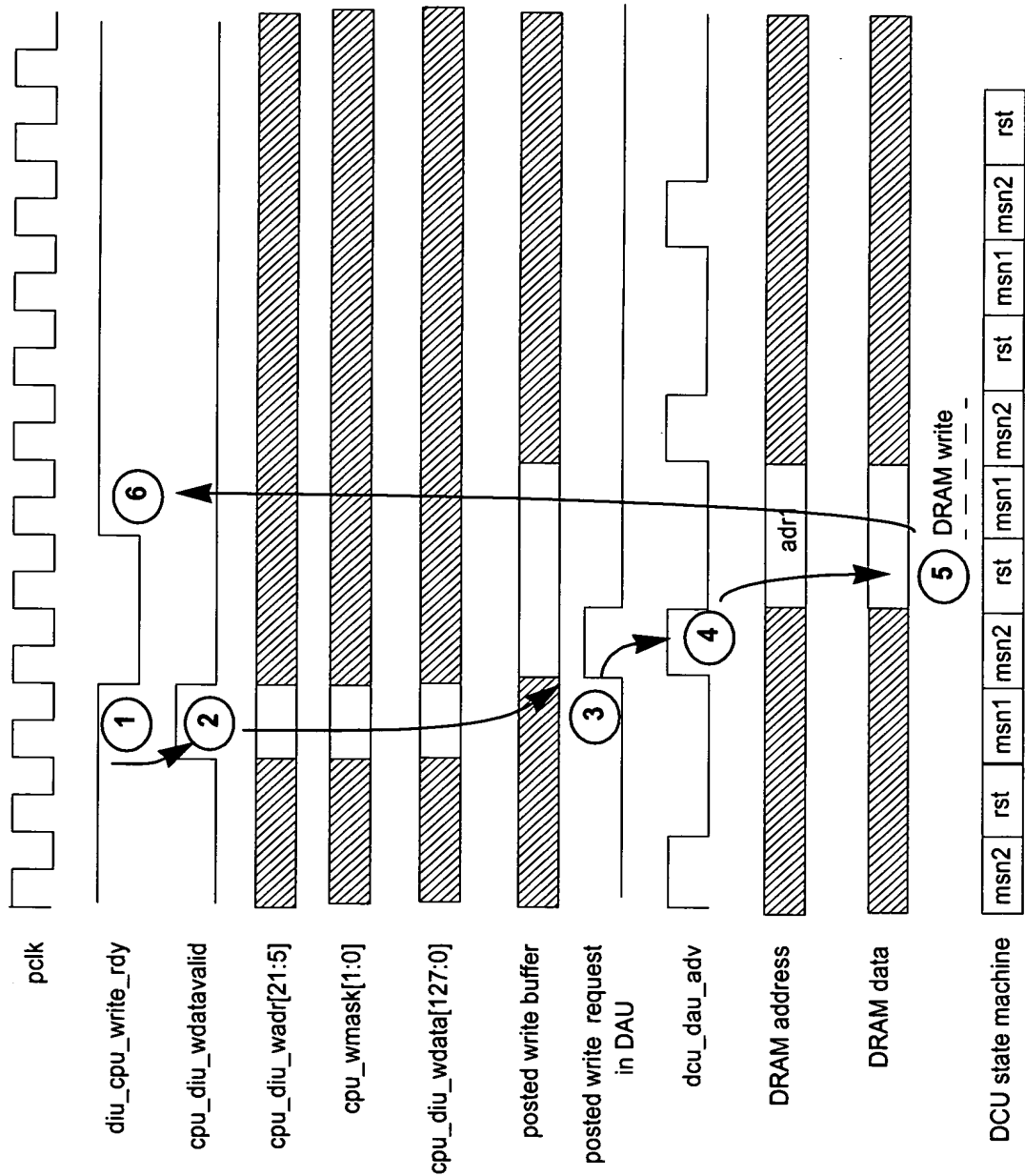


FIG. 112

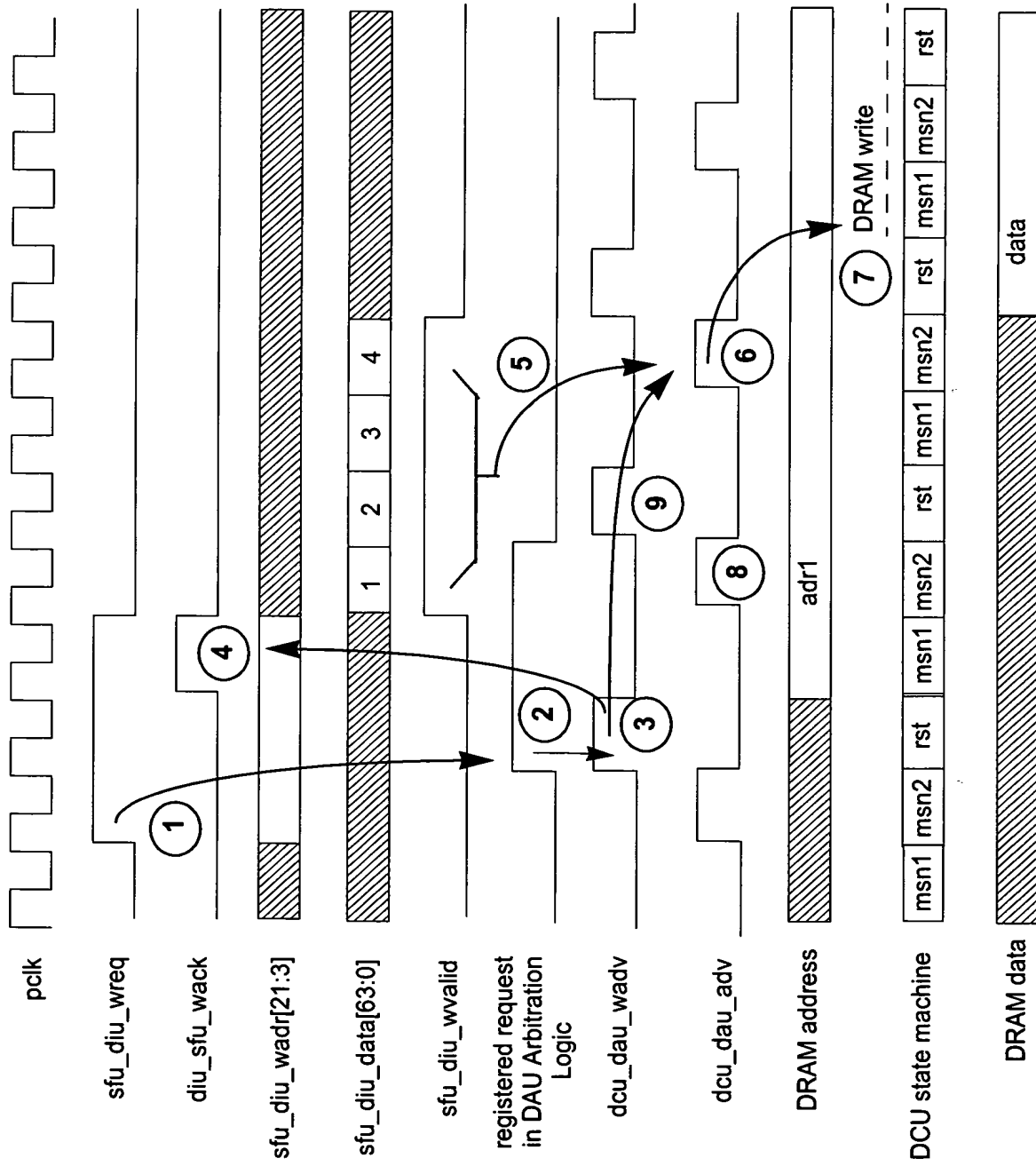


FIG. 113



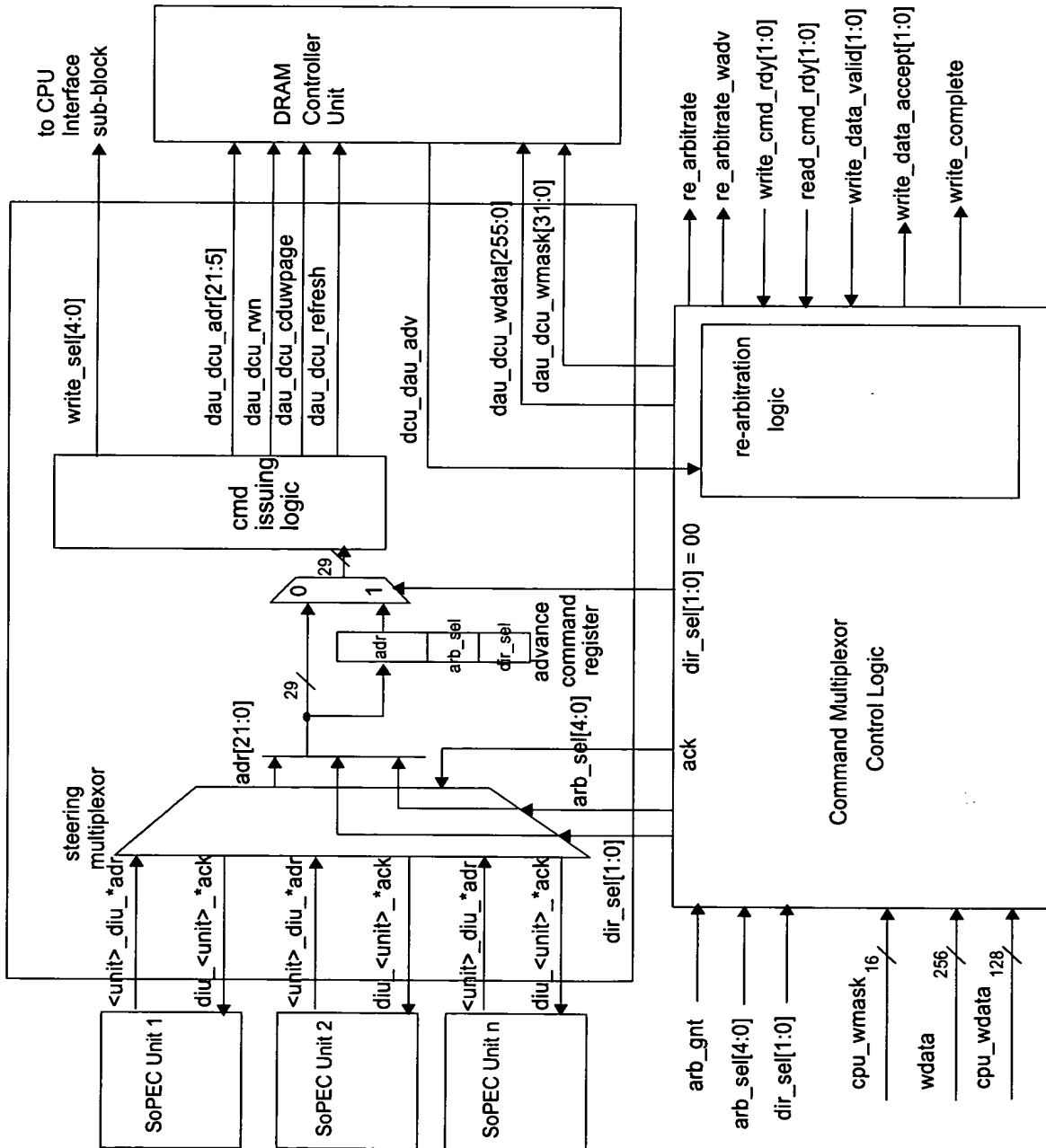


FIG. 115

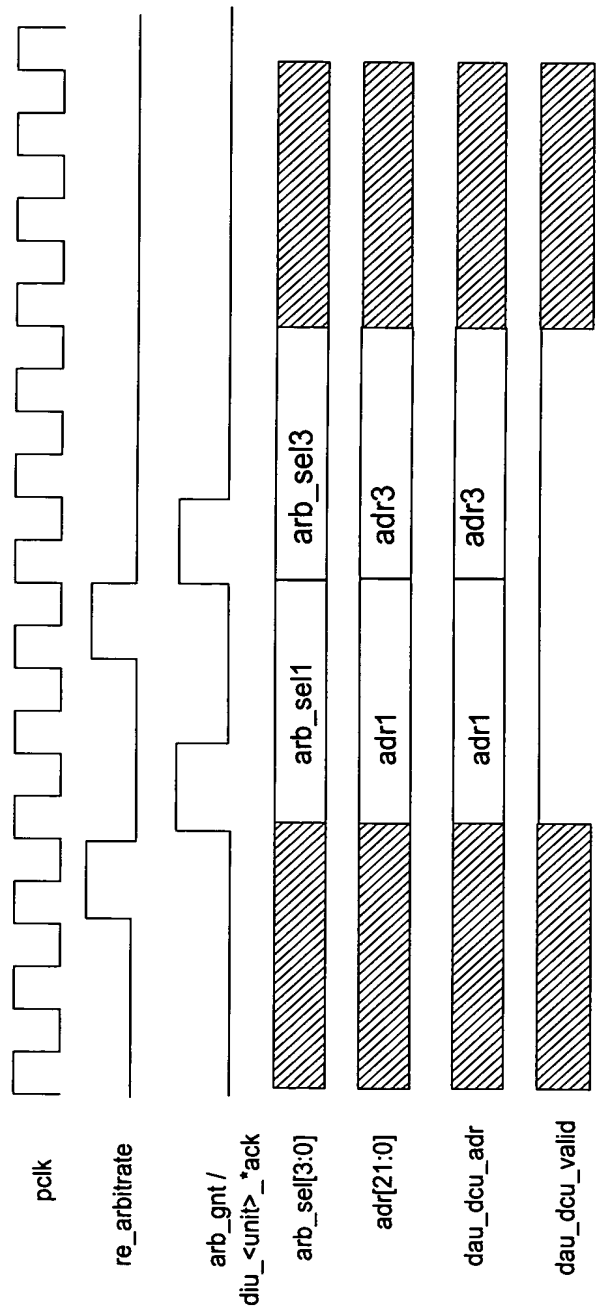


FIG. 116

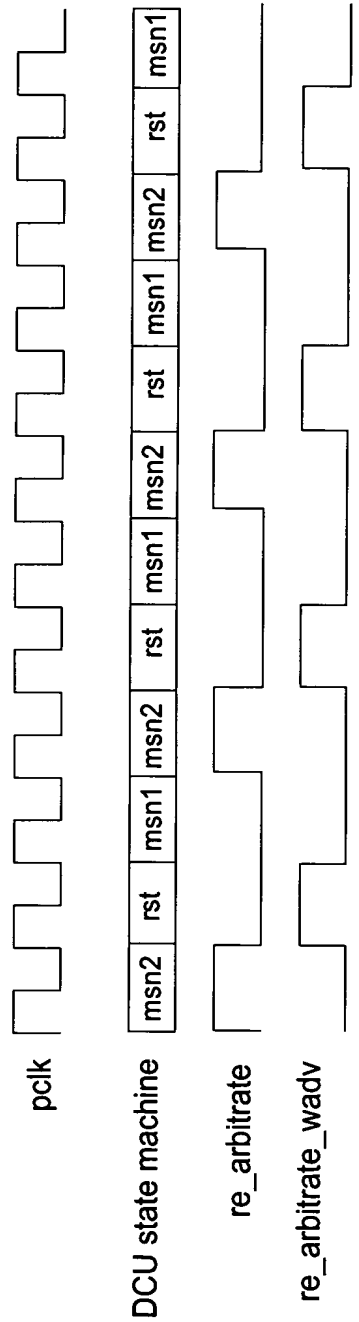


FIG. 117

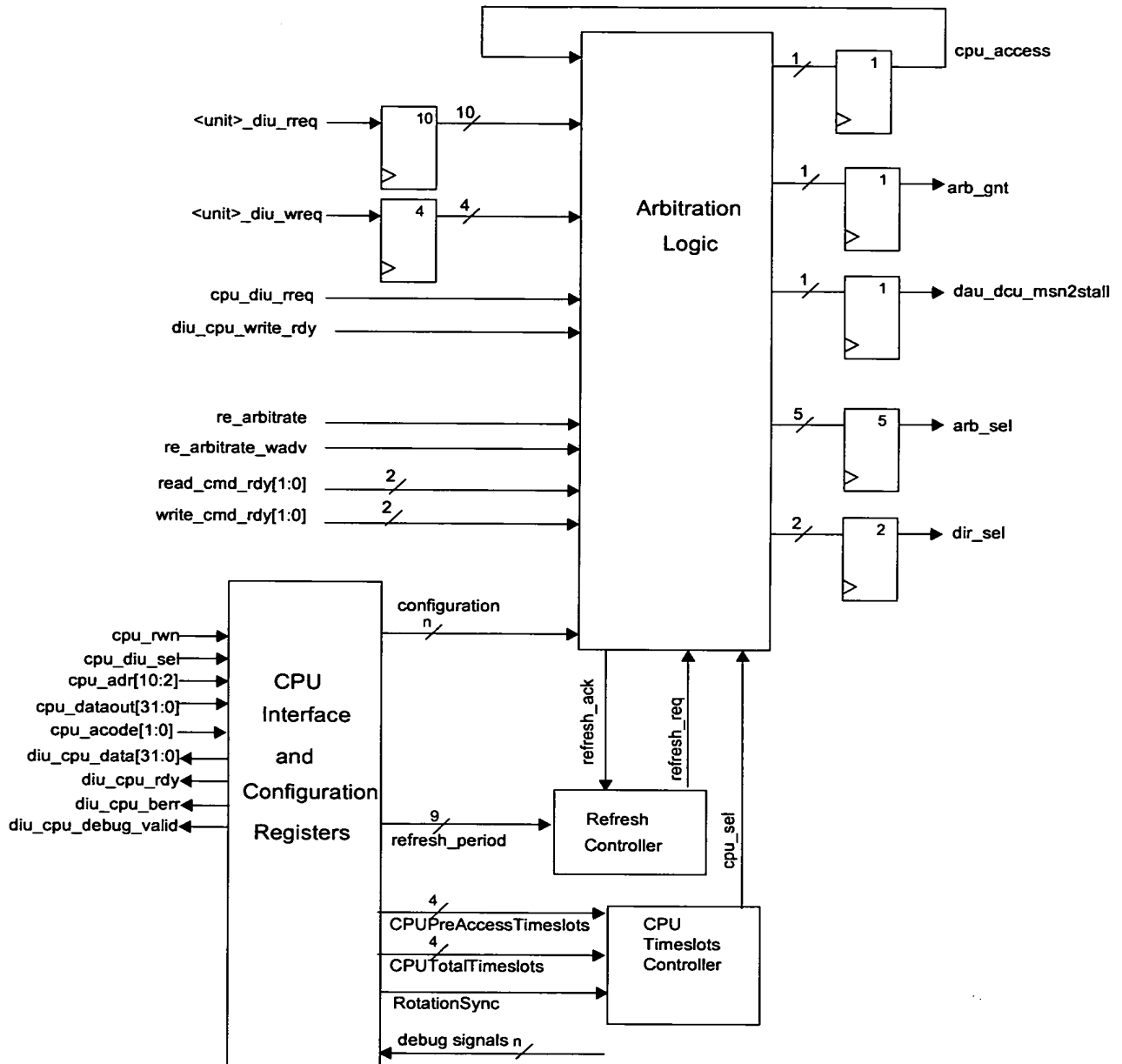


FIG. 118

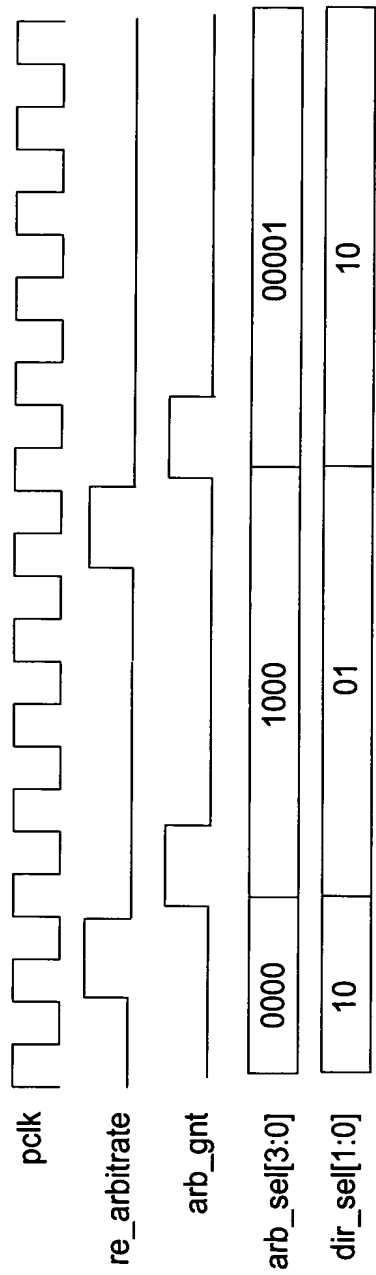


FIG. 119





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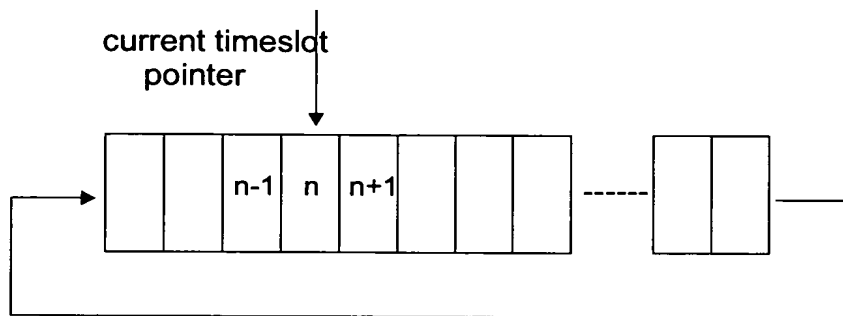


FIG. 121

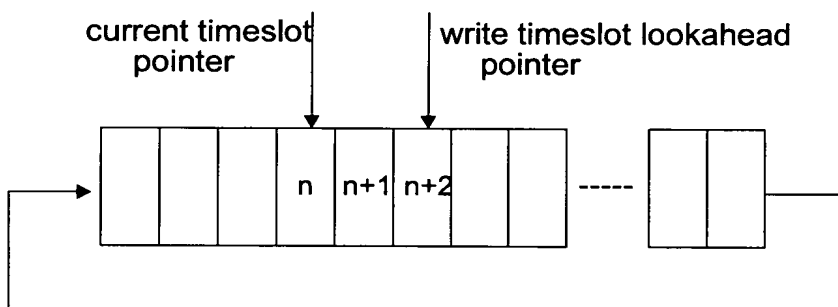


FIG. 122

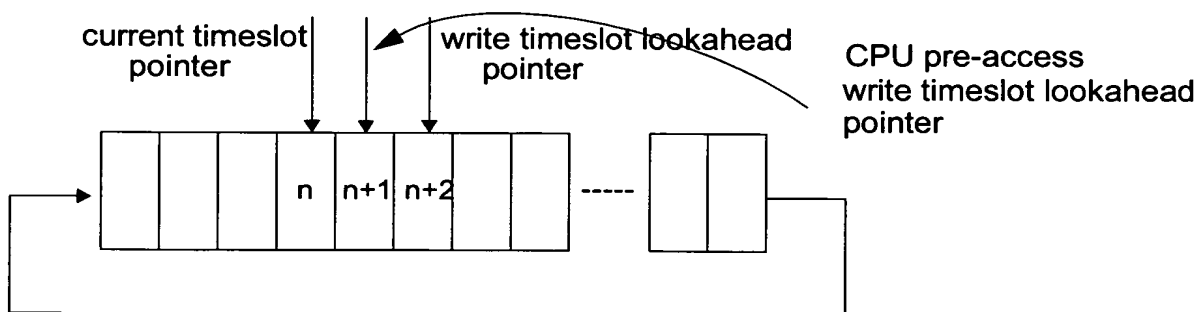


FIG. 123

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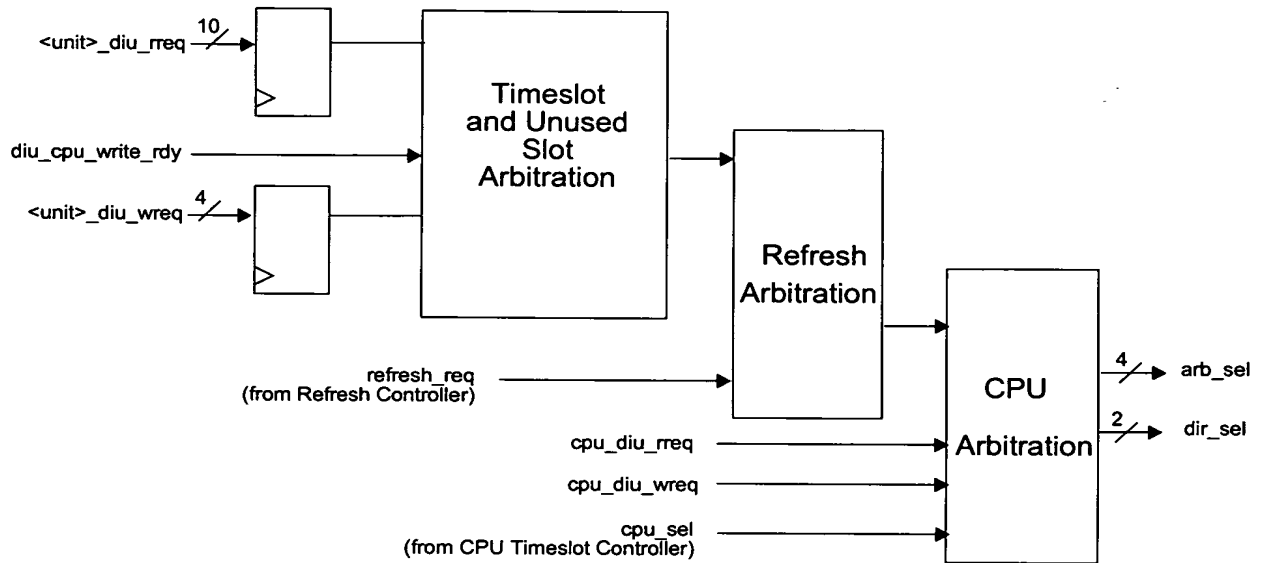


FIG. 124

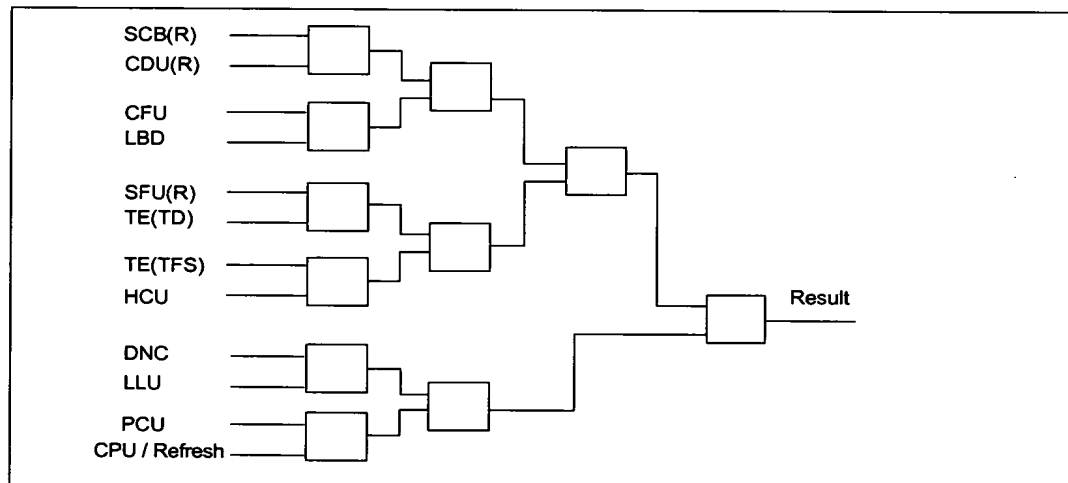


FIG. 125



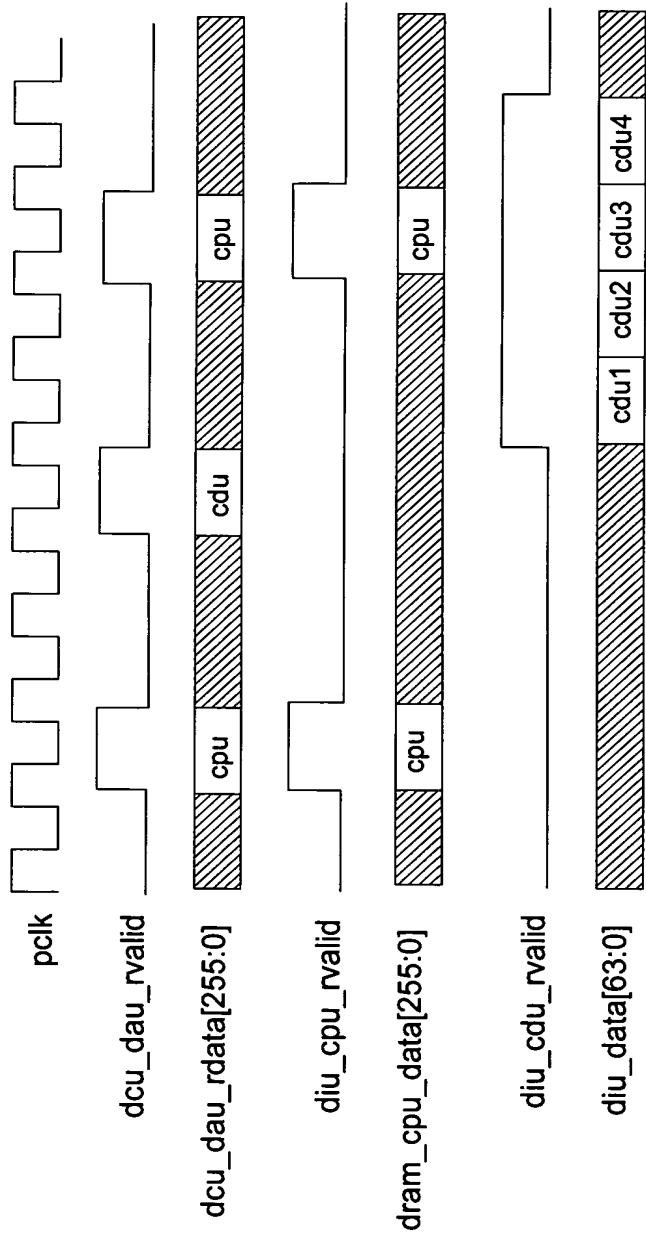


FIG. 127

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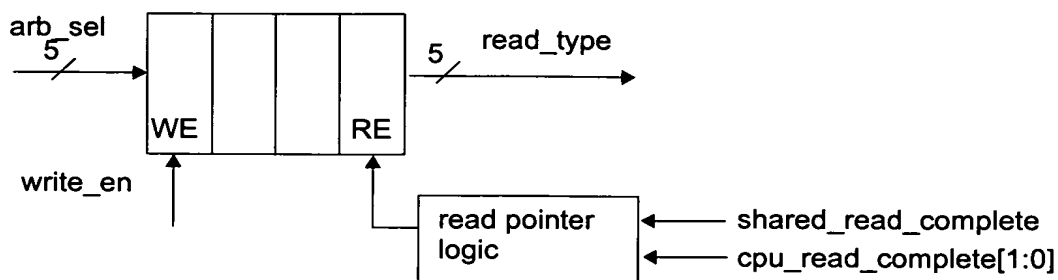


FIG. 128

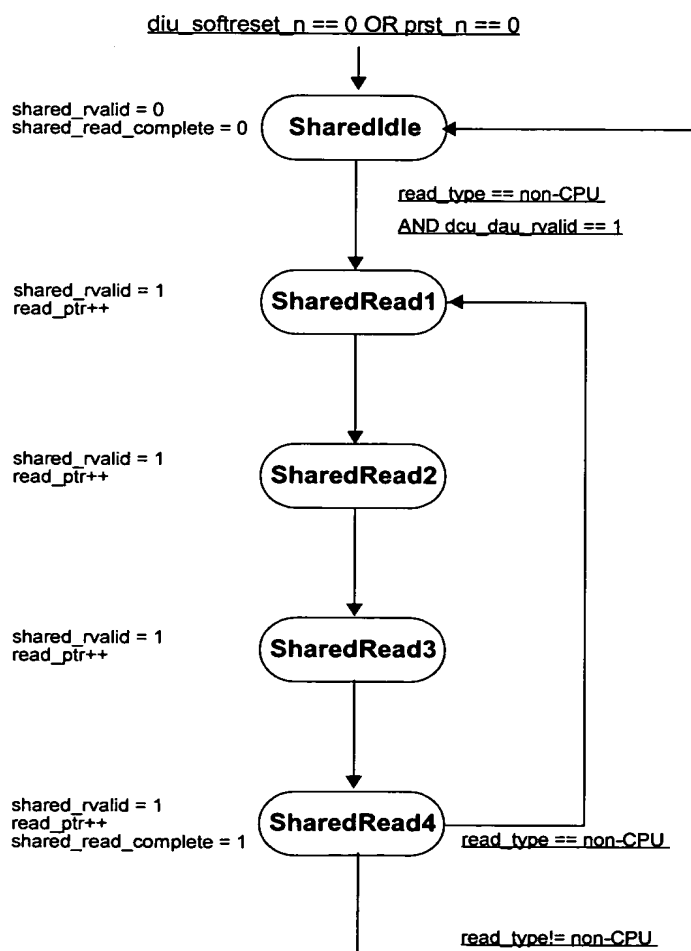


FIG. 129

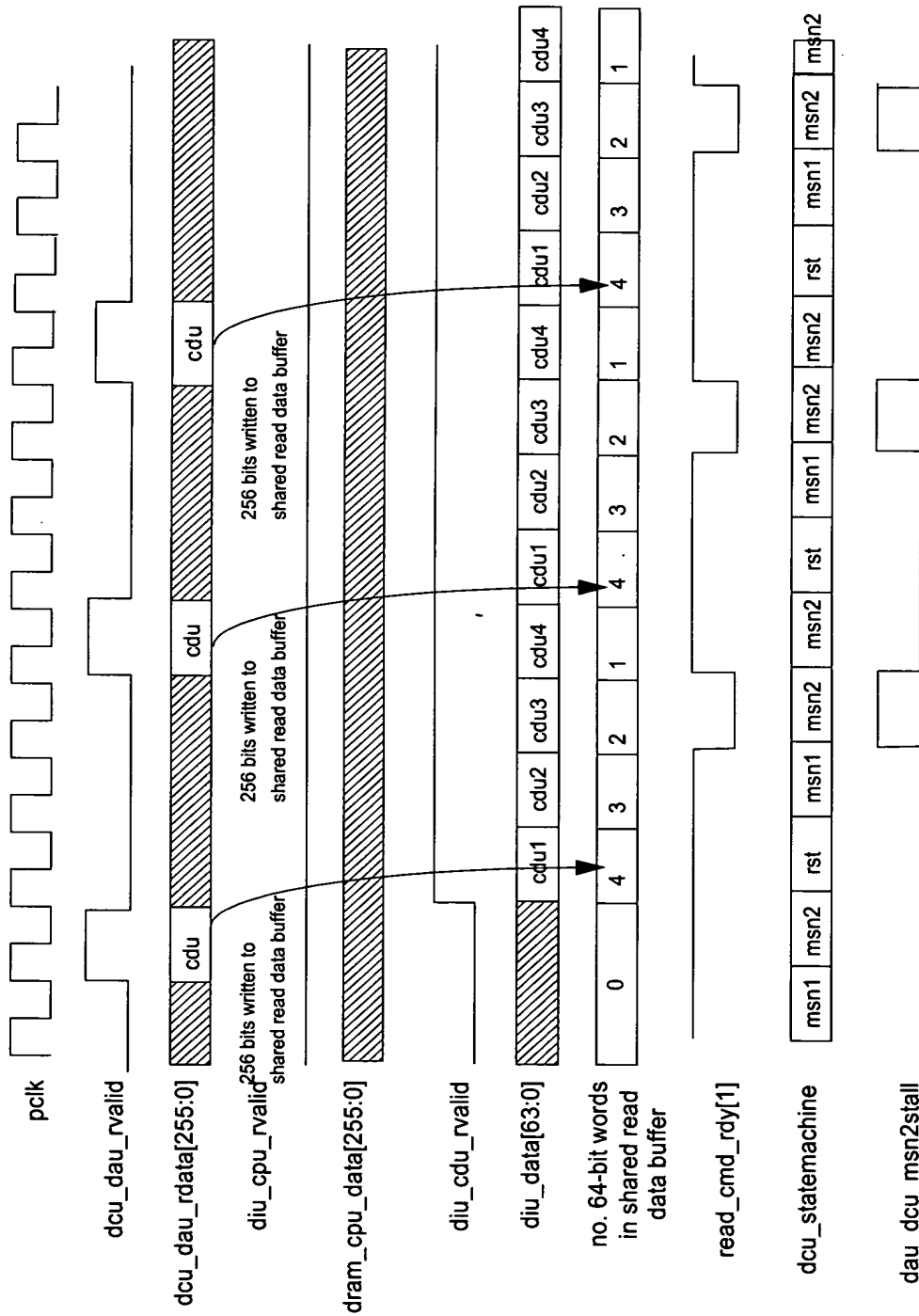


FIG. 130

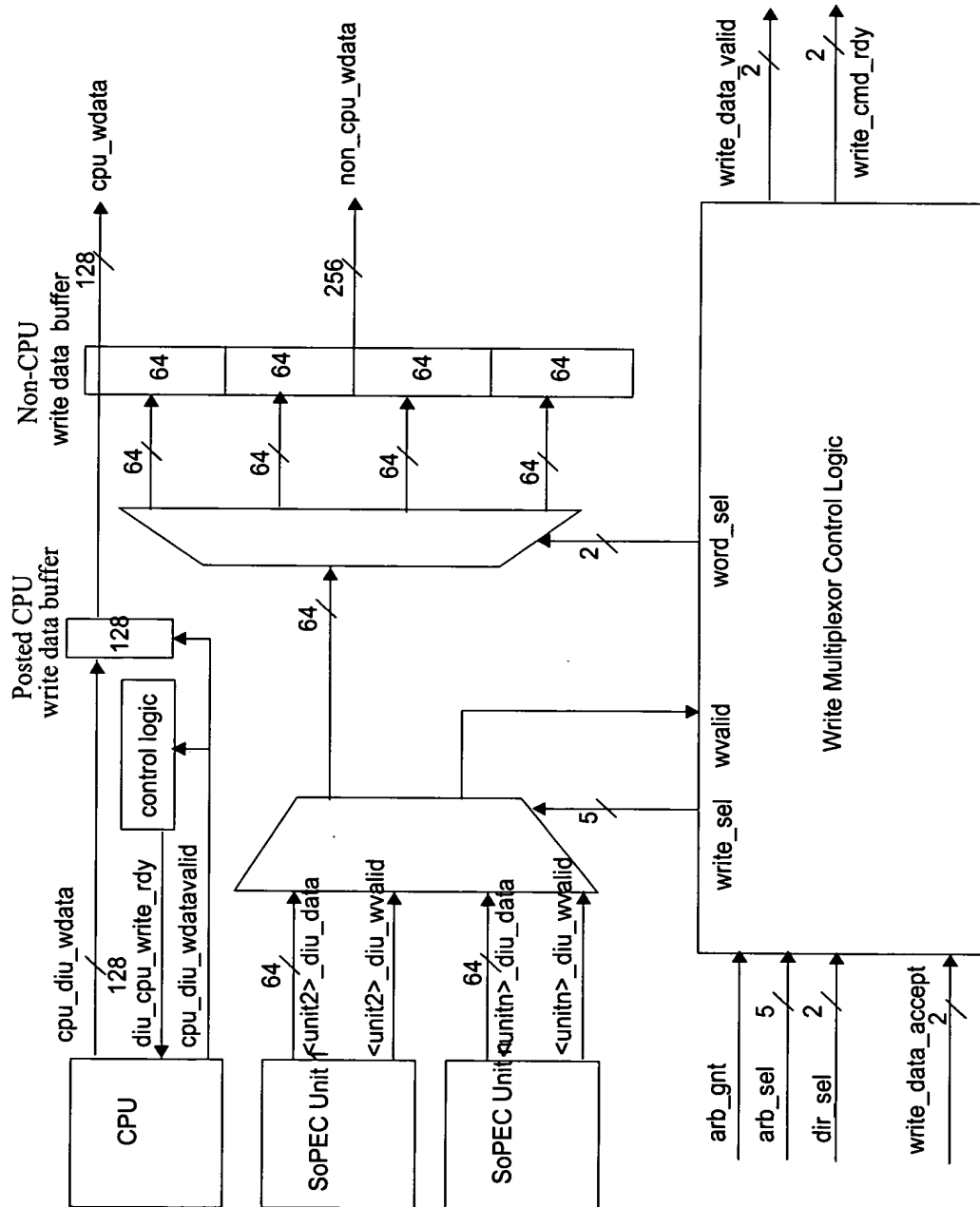


FIG. 131



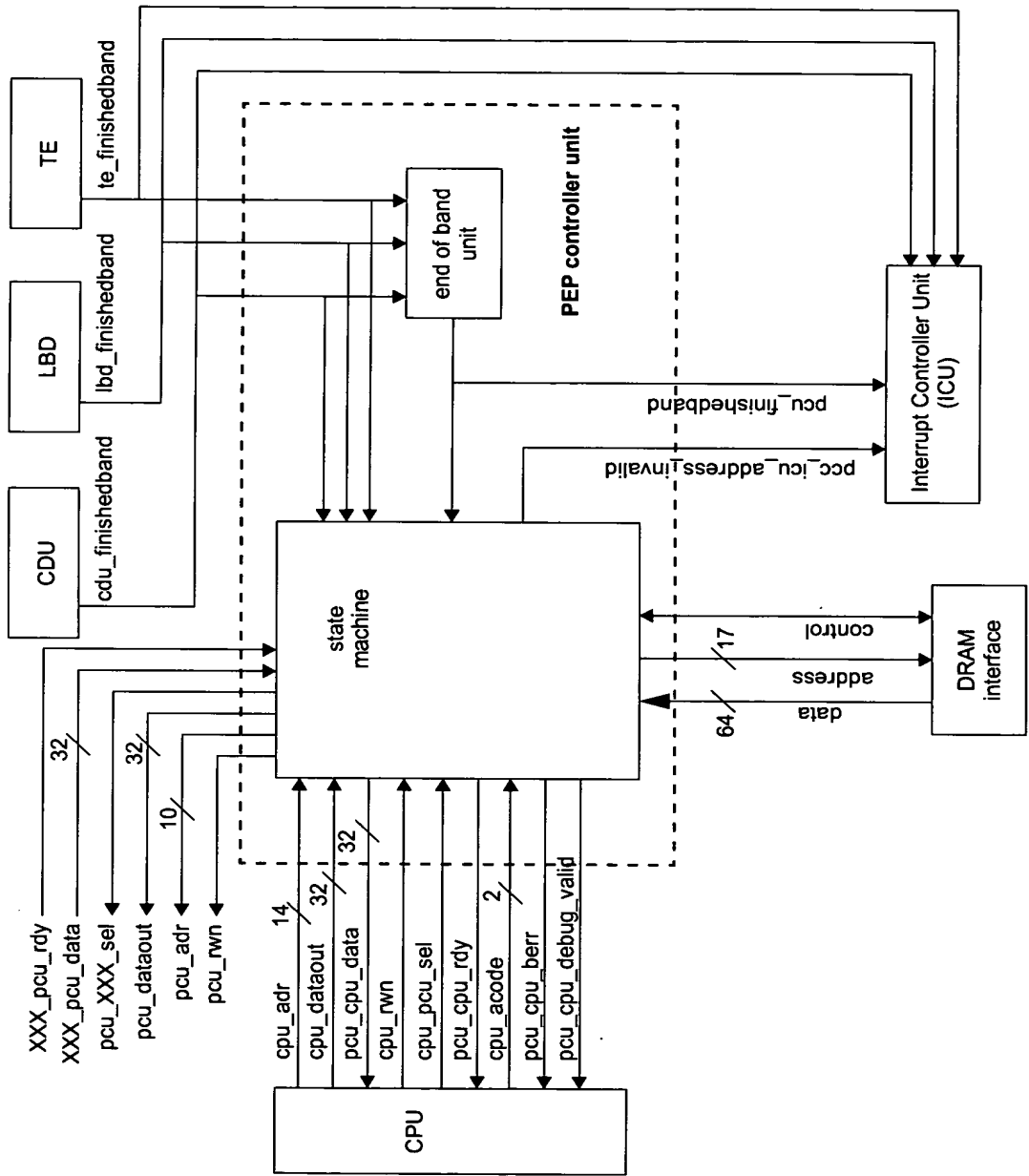


FIG. 132

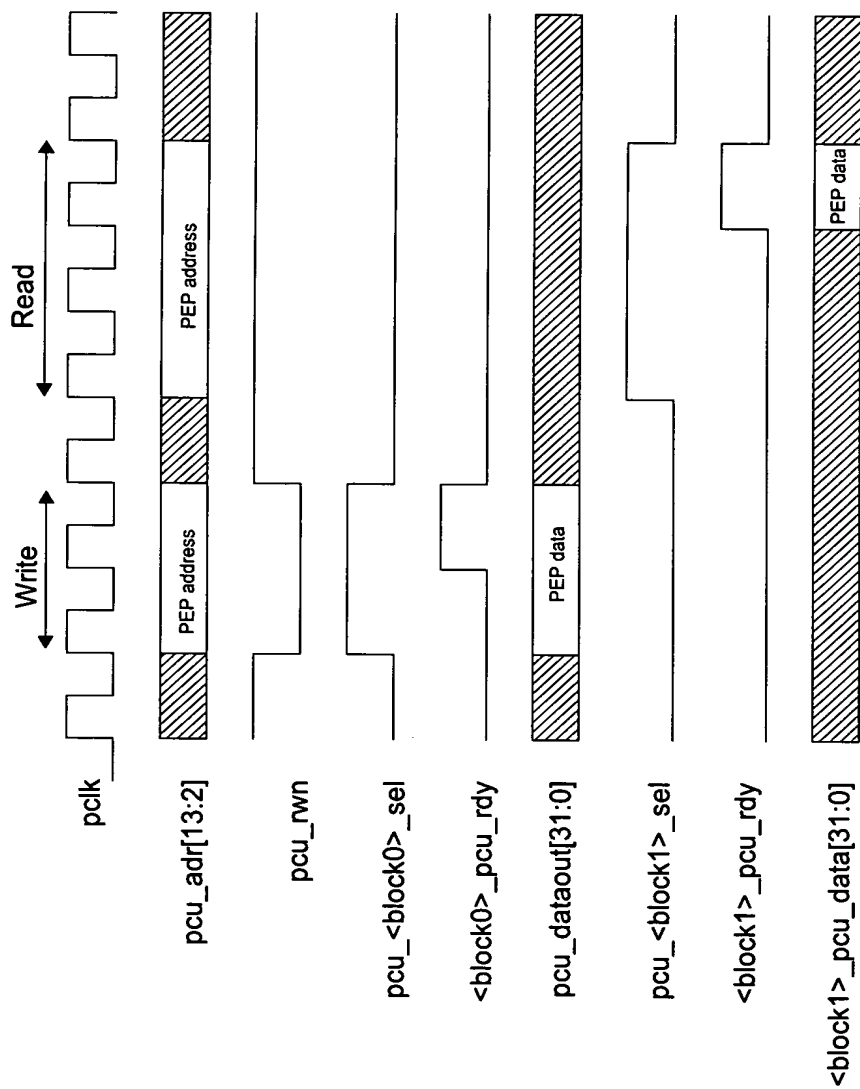


FIG. 133

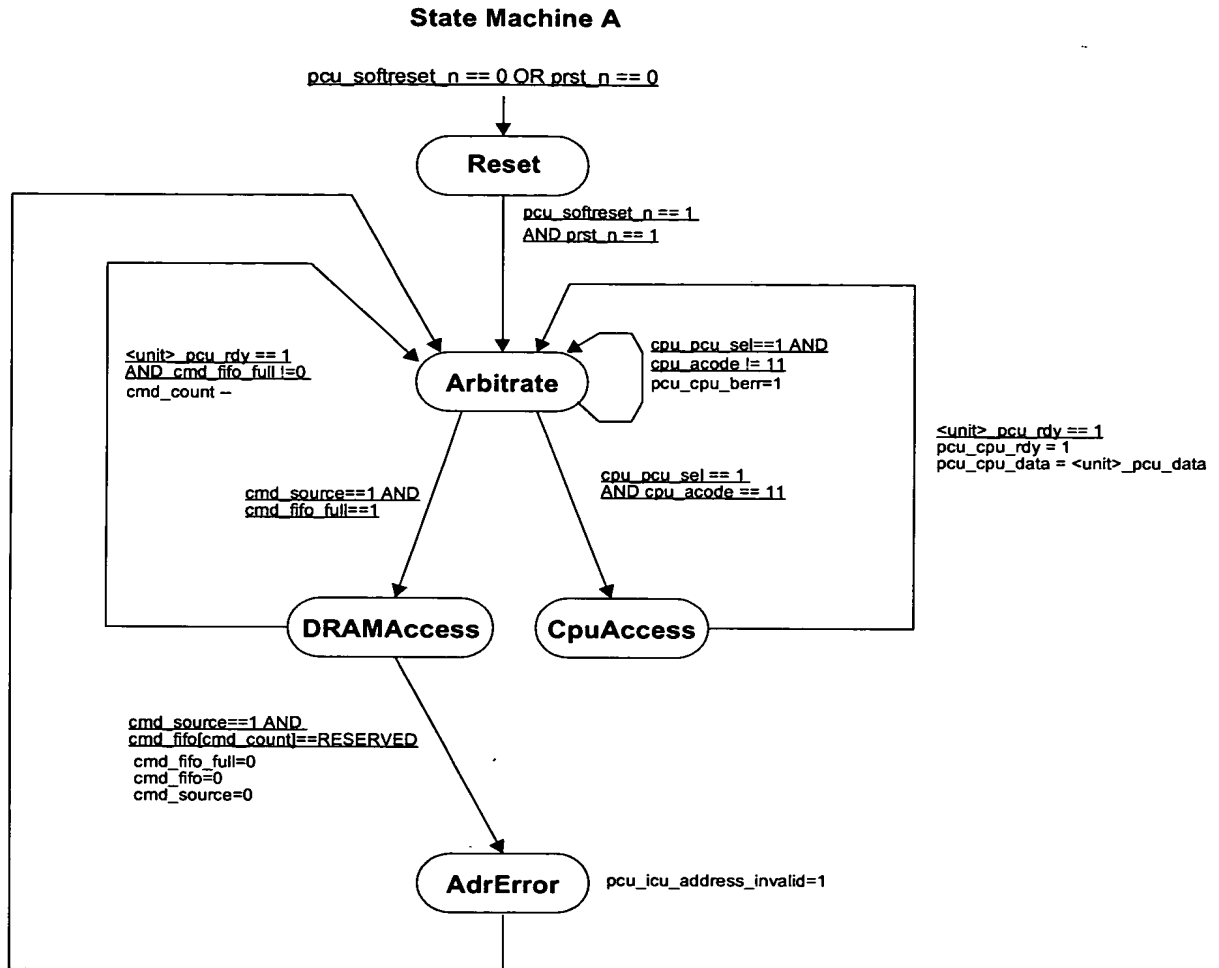


FIG. 134

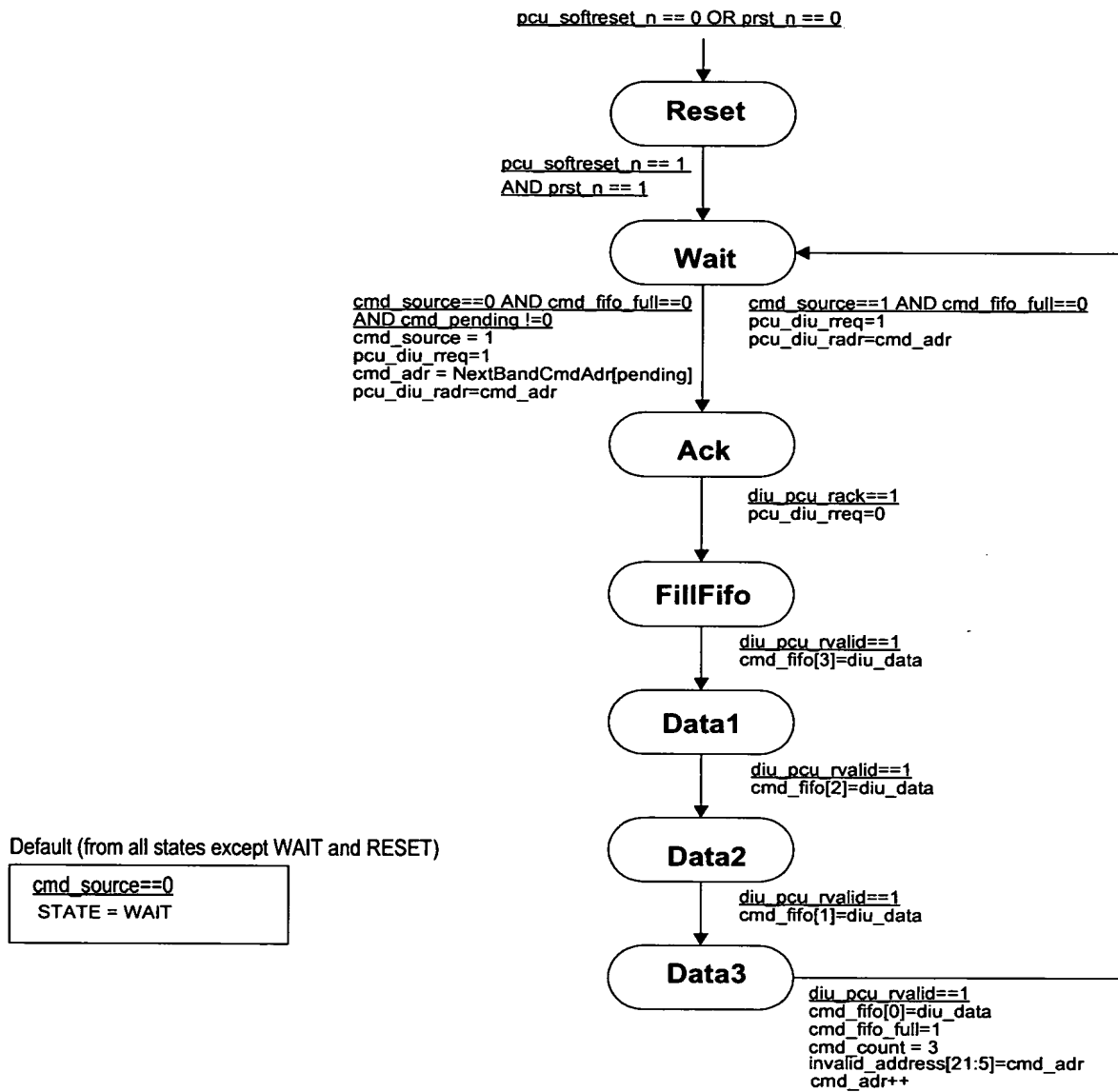
**State Machine B**

FIG. 135

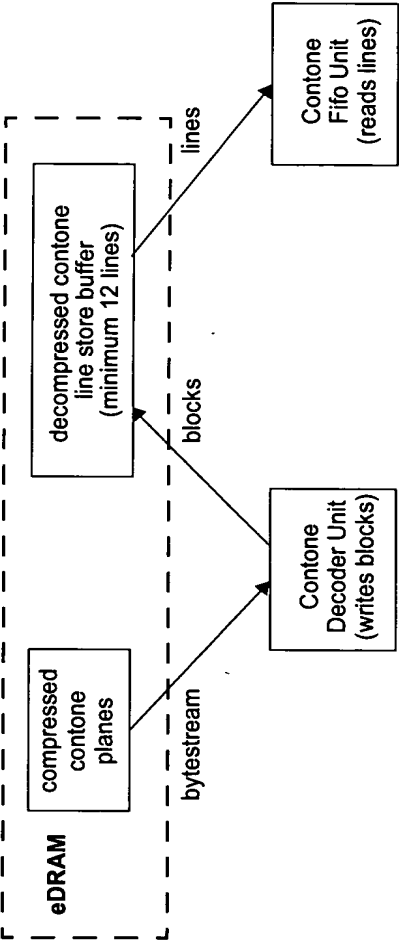


FIG. 136

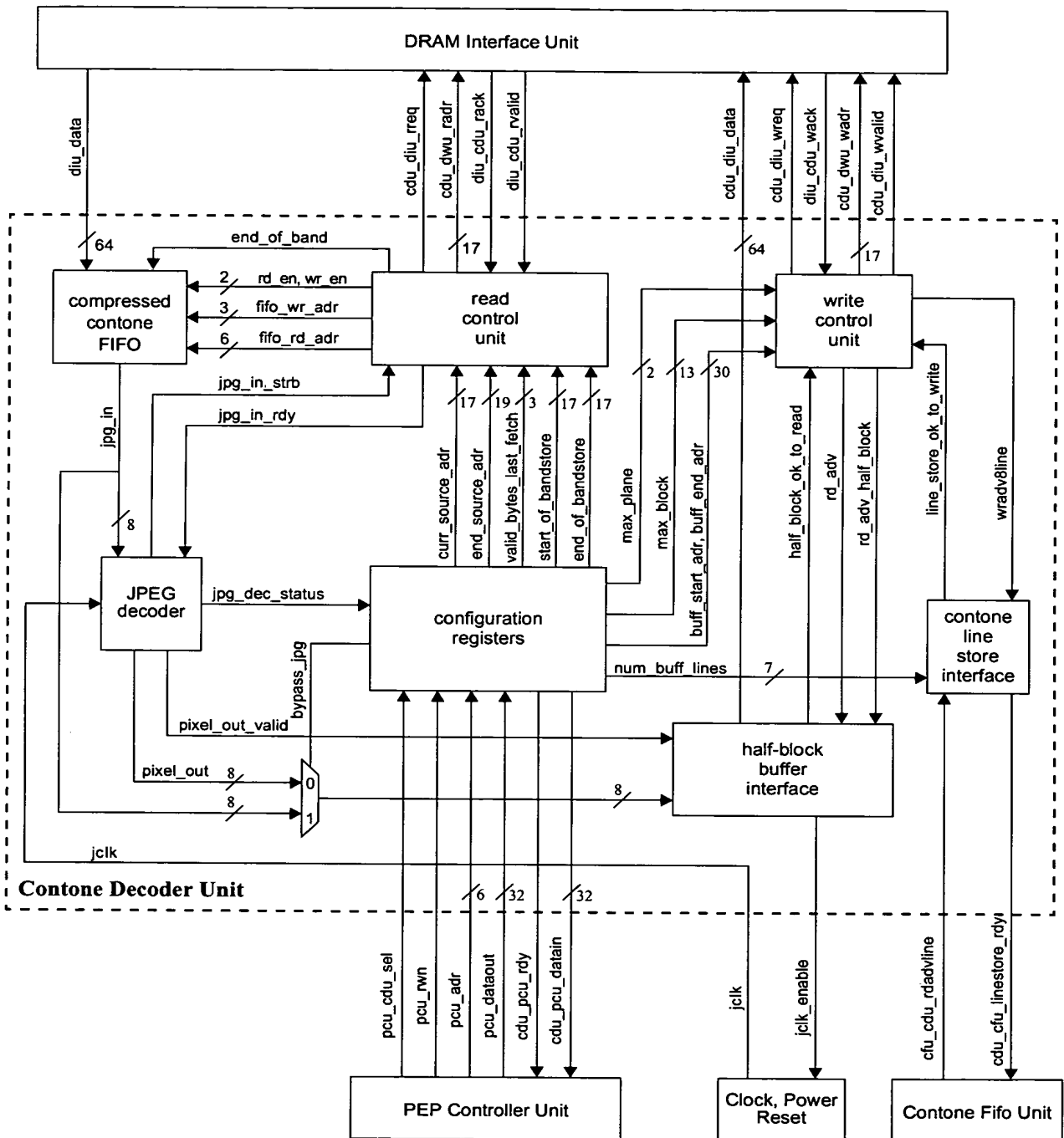


FIG. 137

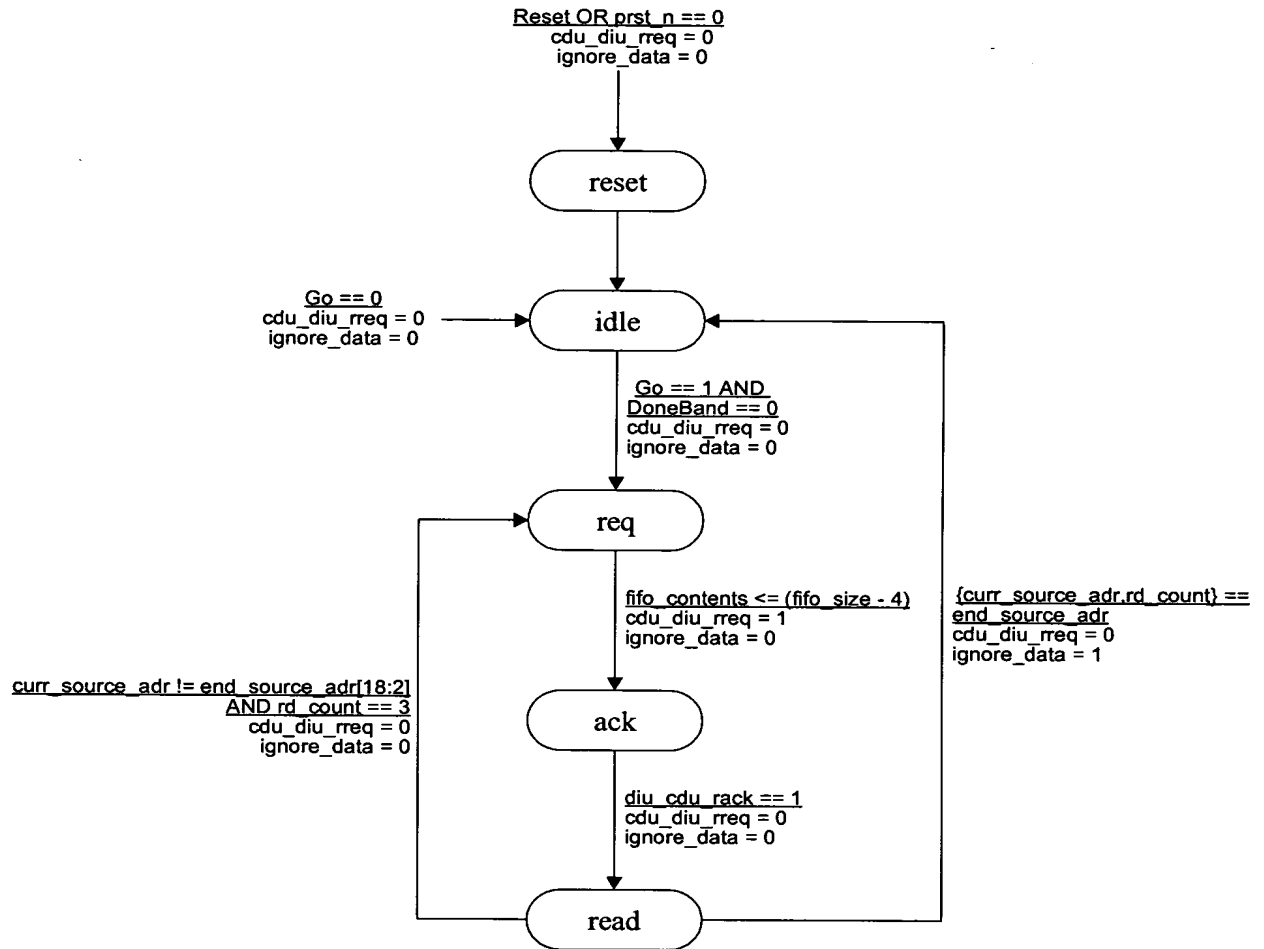


FIG. 138

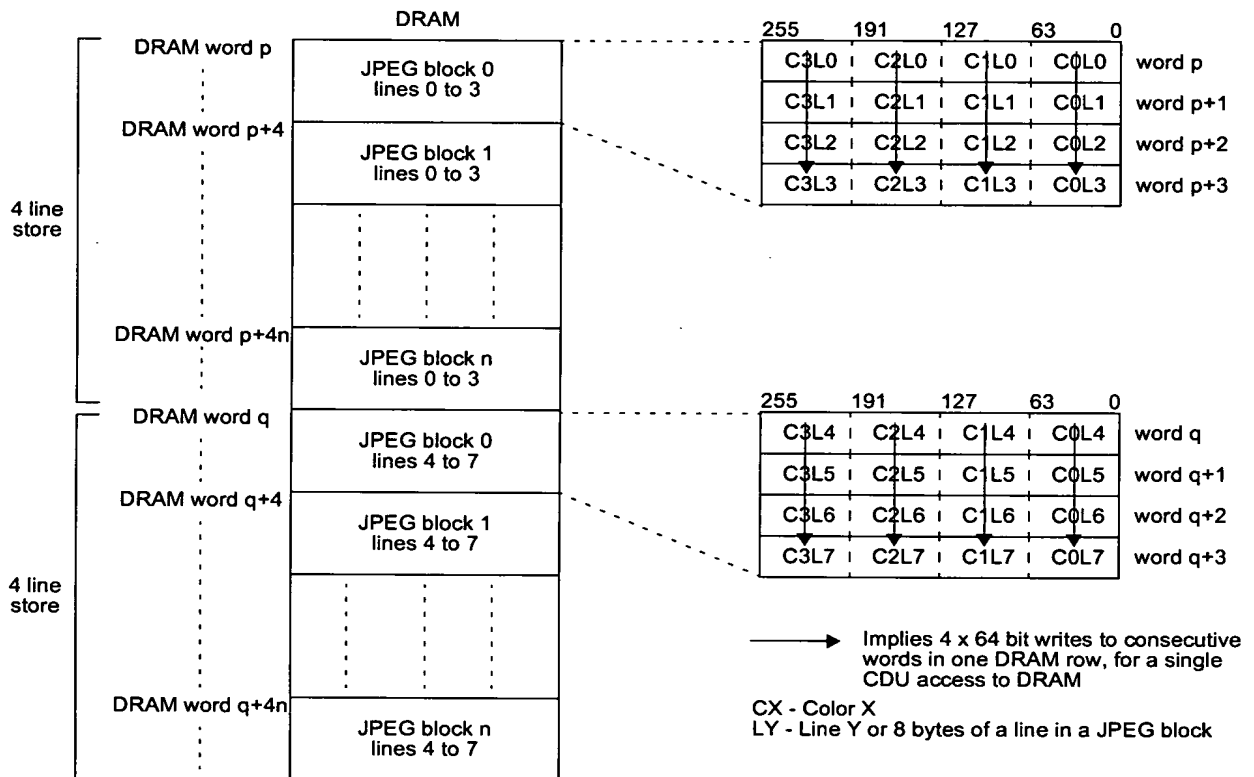


FIG. 139



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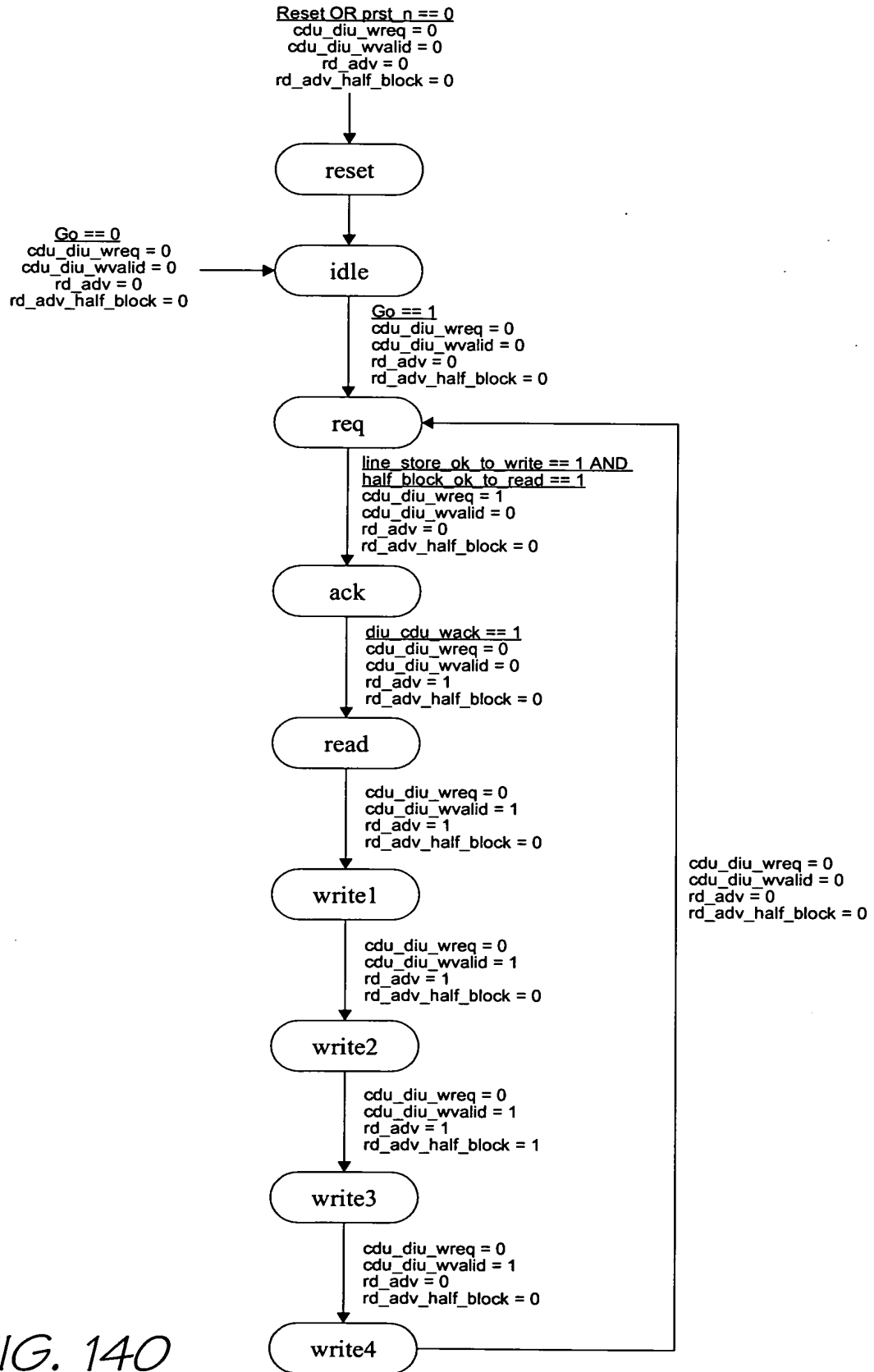
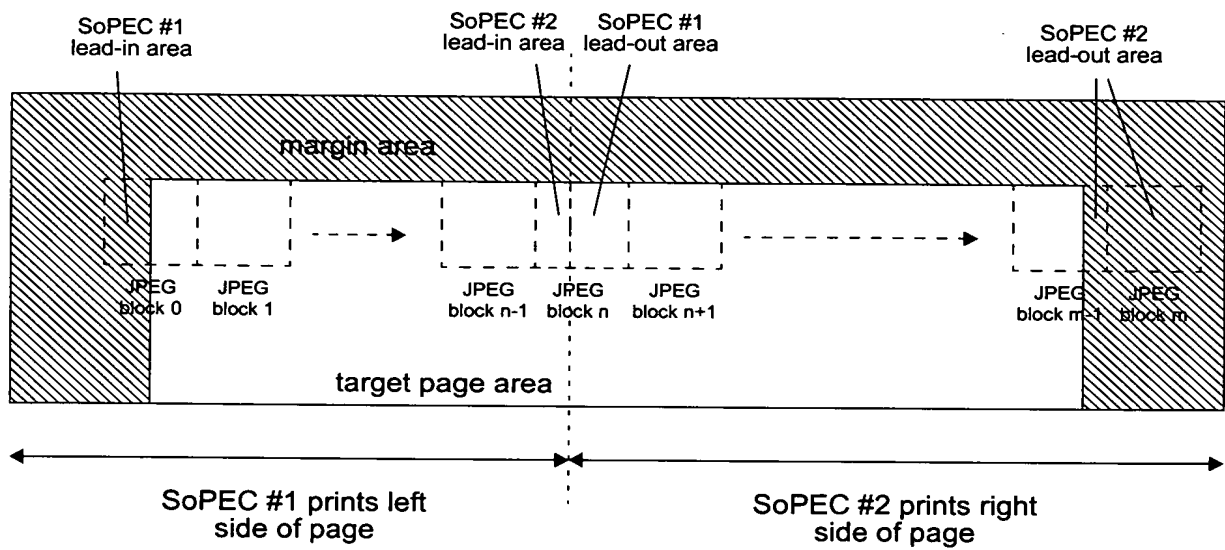


FIG. 140

*FIG. 141*

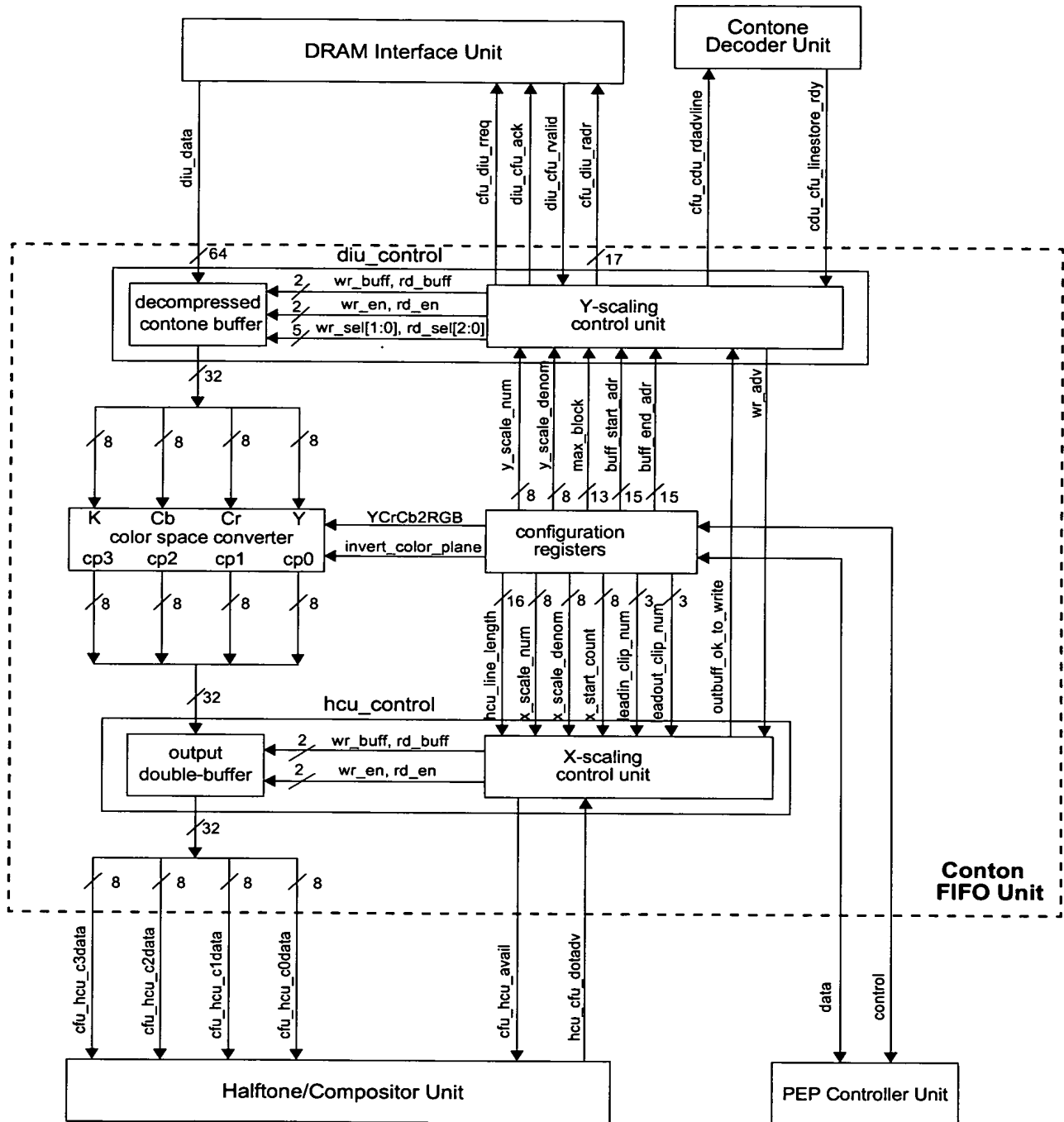


FIG. 142

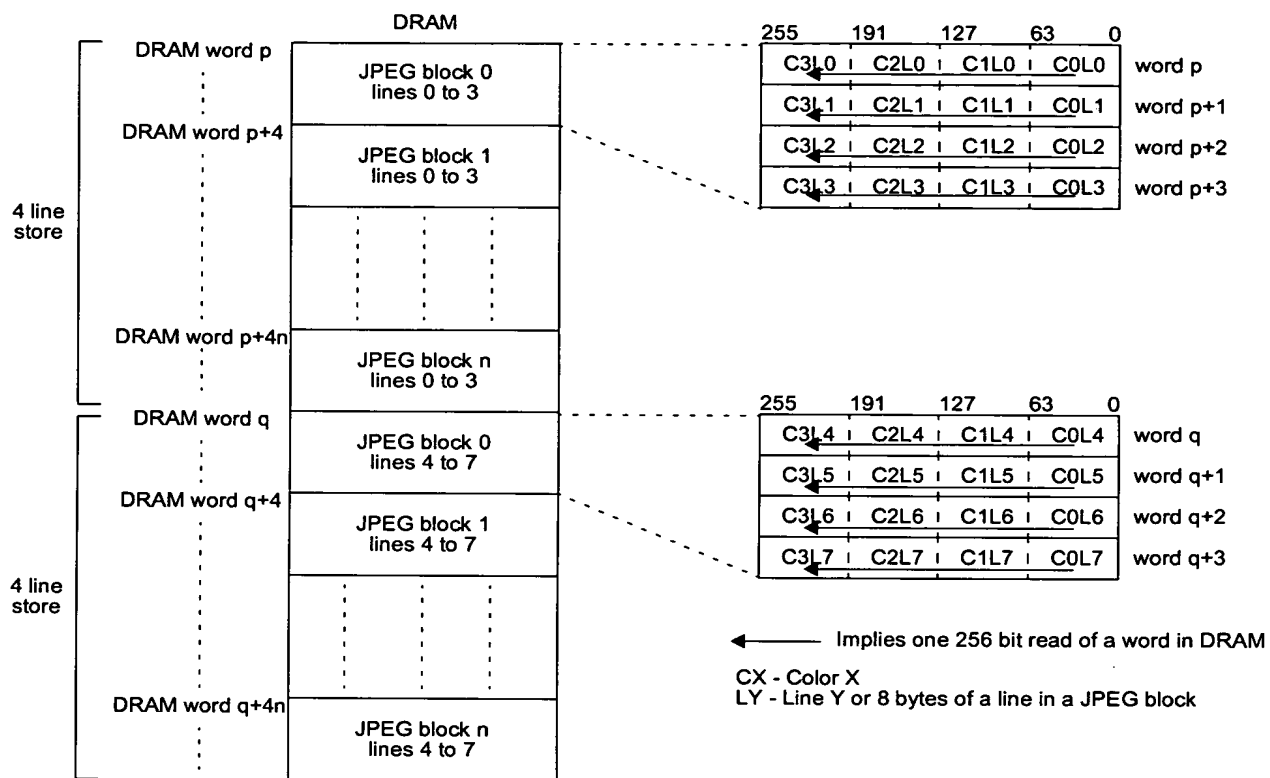


FIG. 143

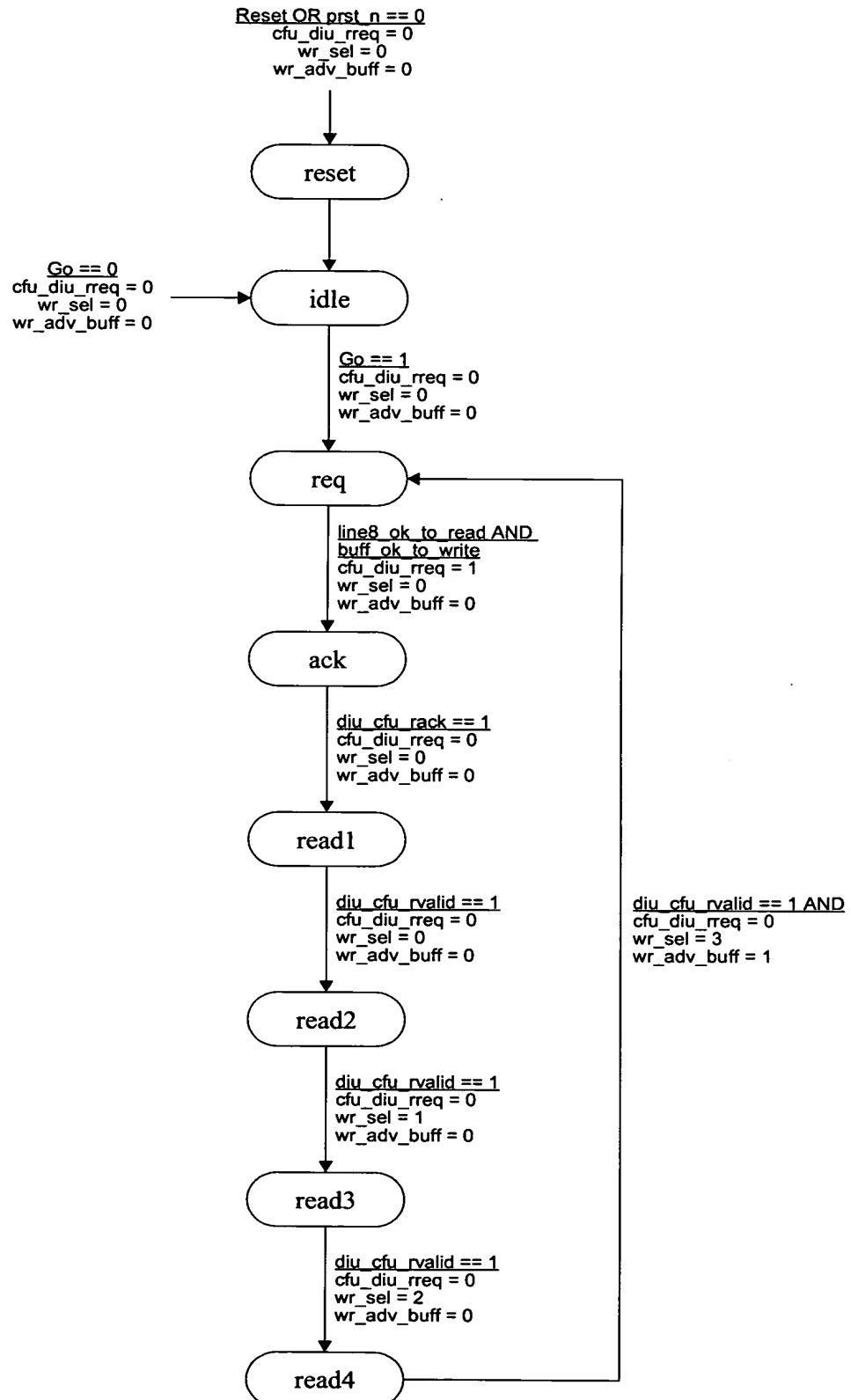


FIG. 144

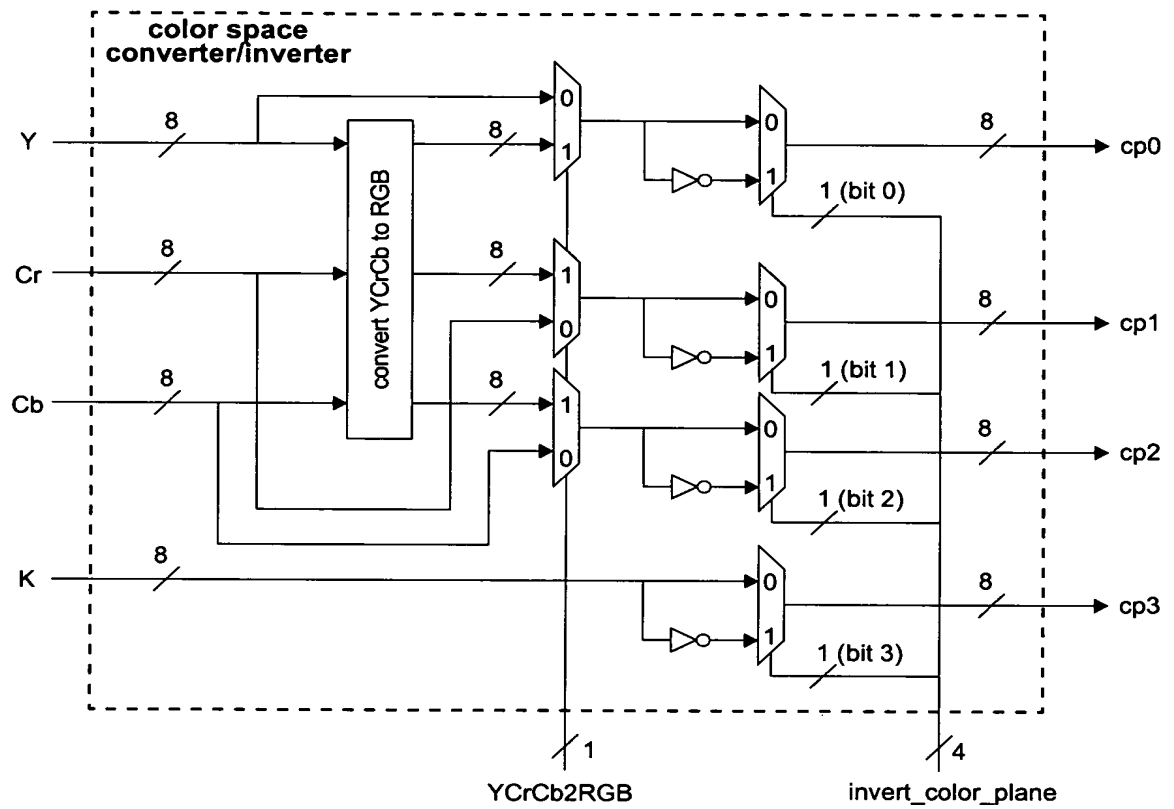


FIG. 145

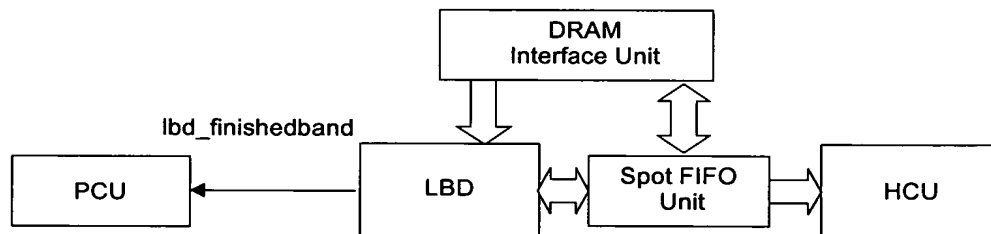


FIG. 146

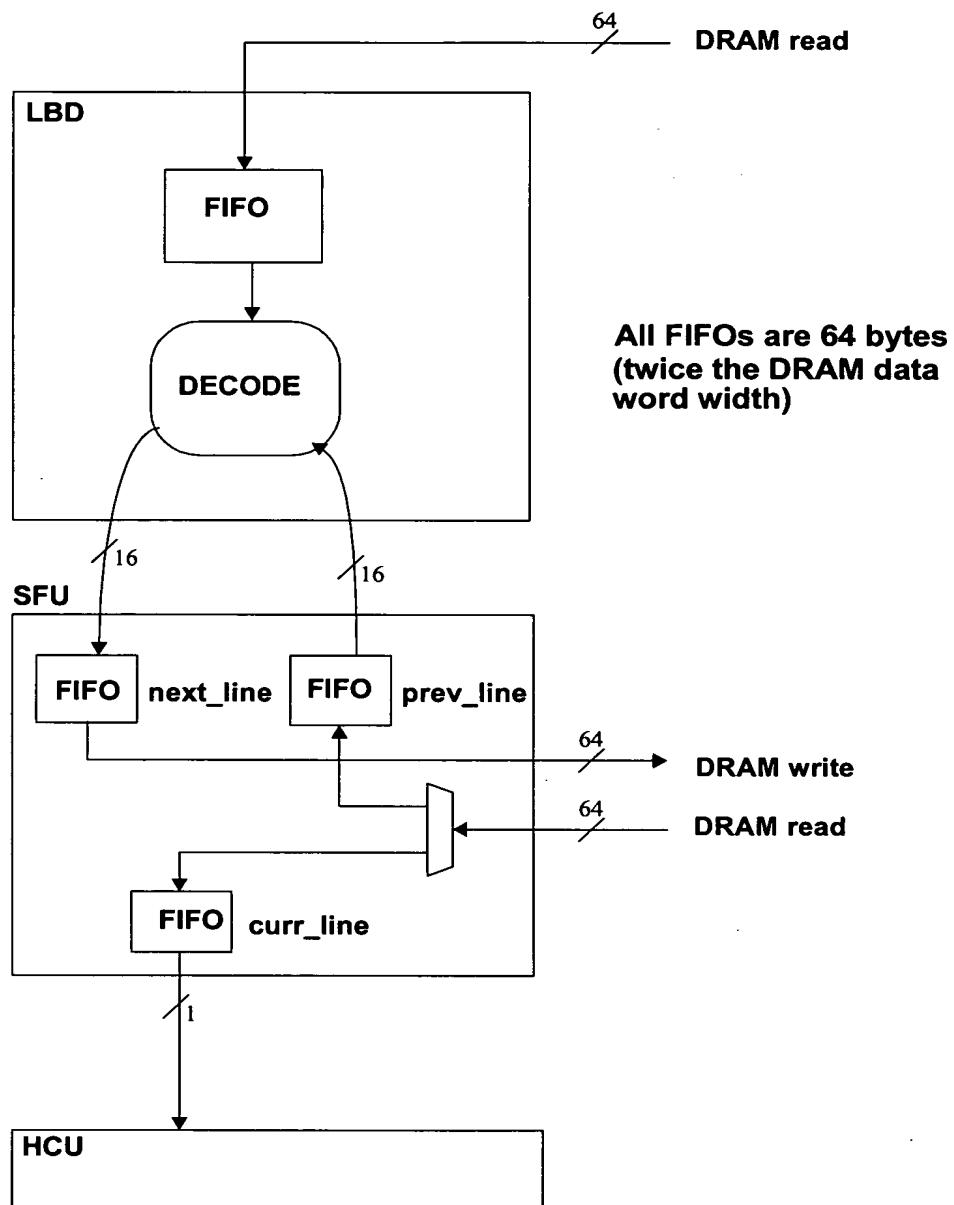


FIG. 147

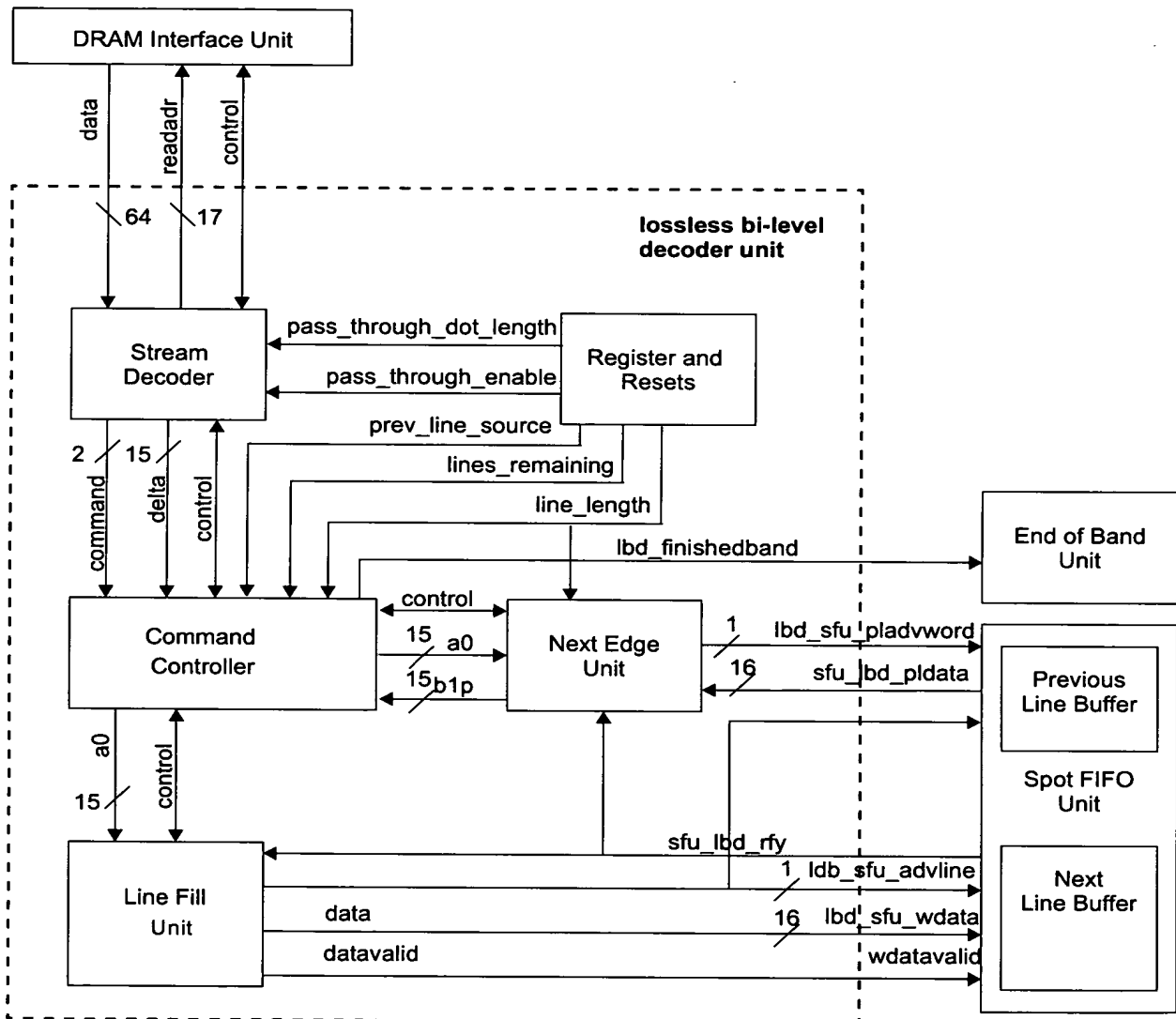


FIG. 148



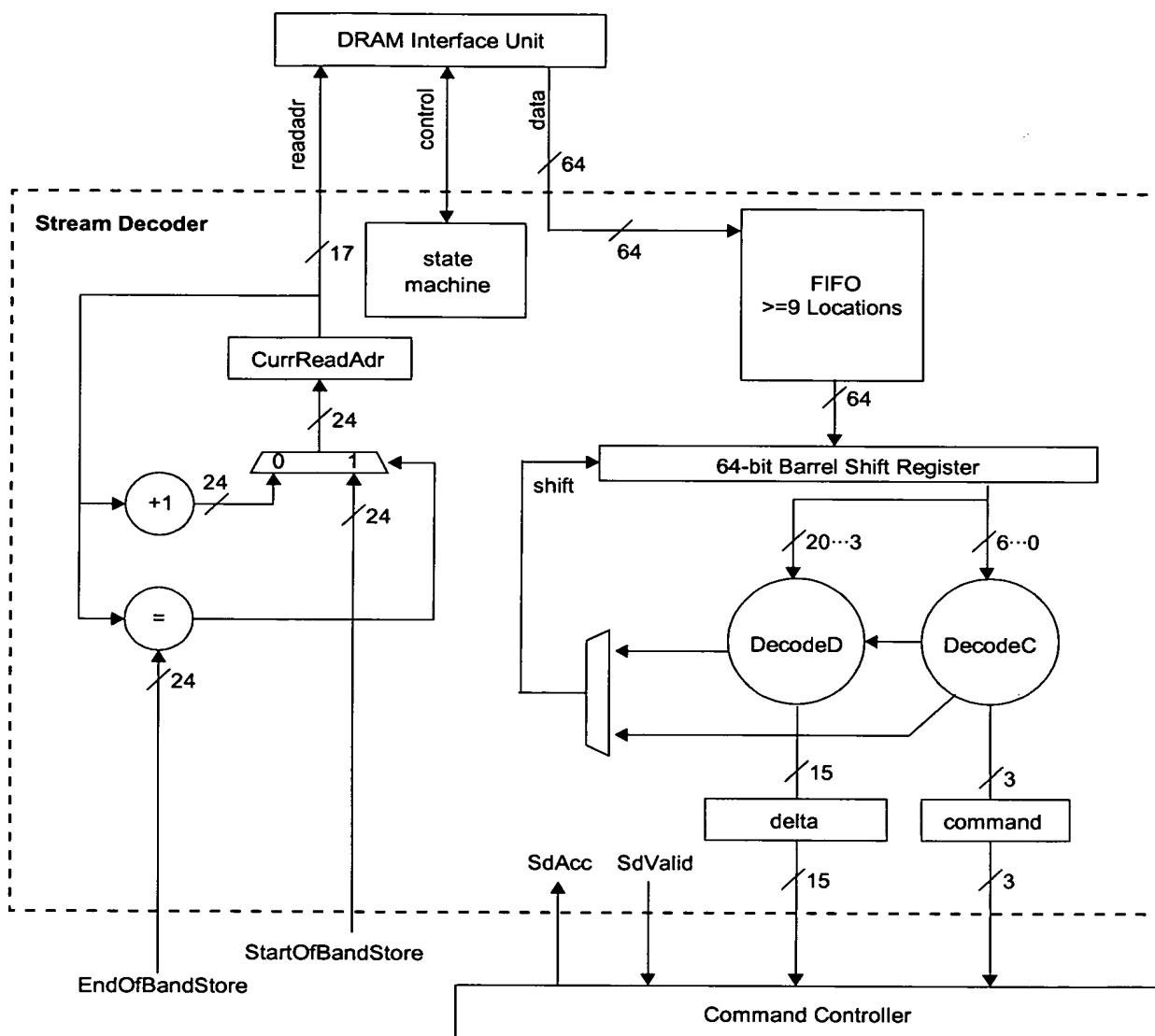


FIG. 149

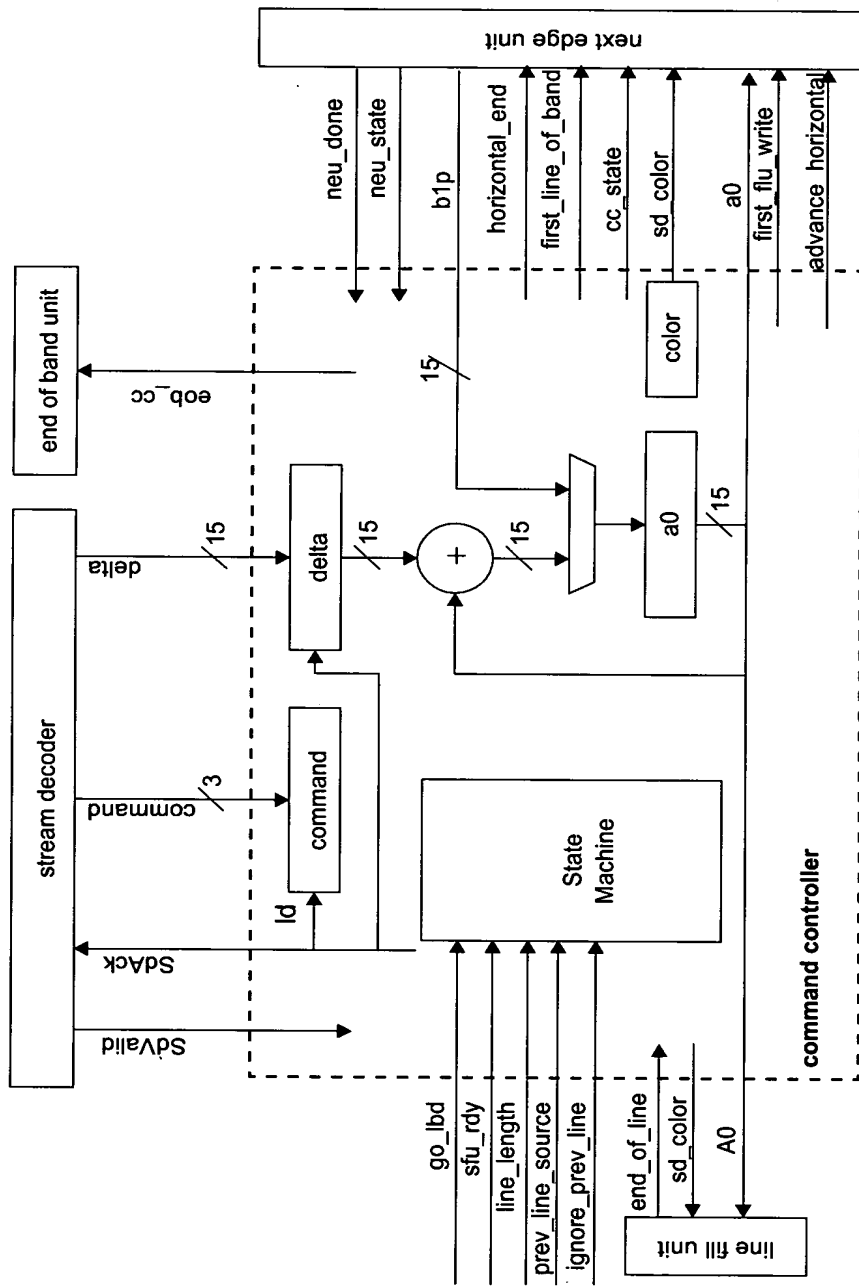


FIG. 150

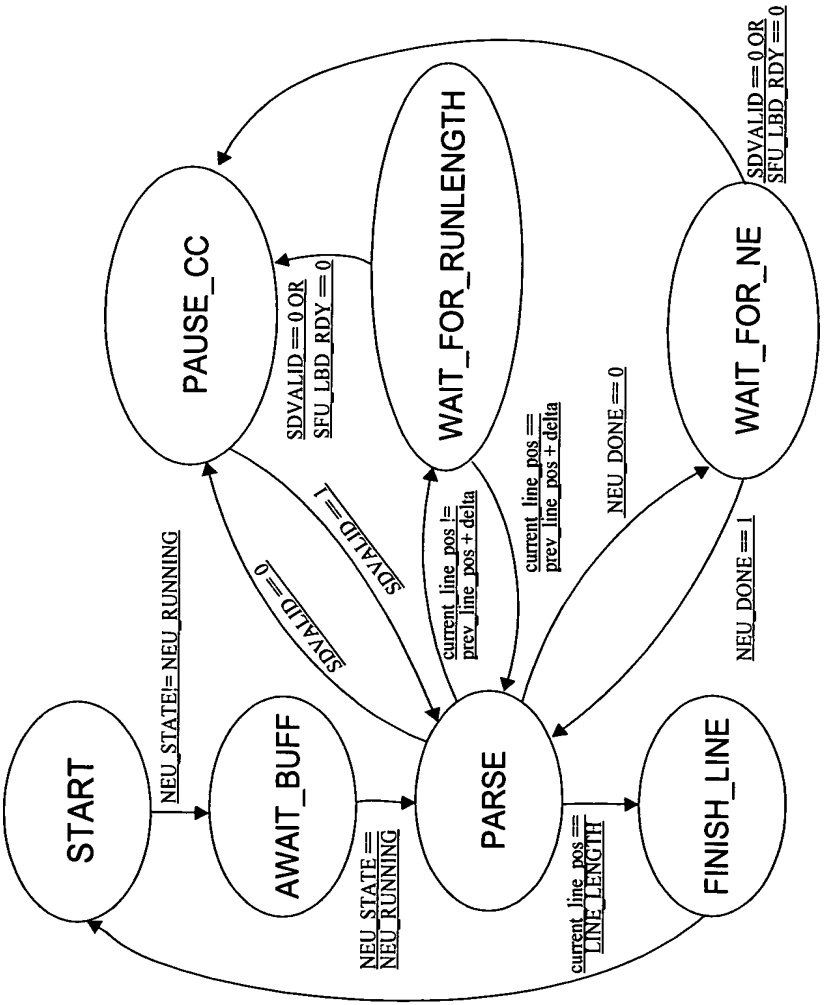


FIG. 151

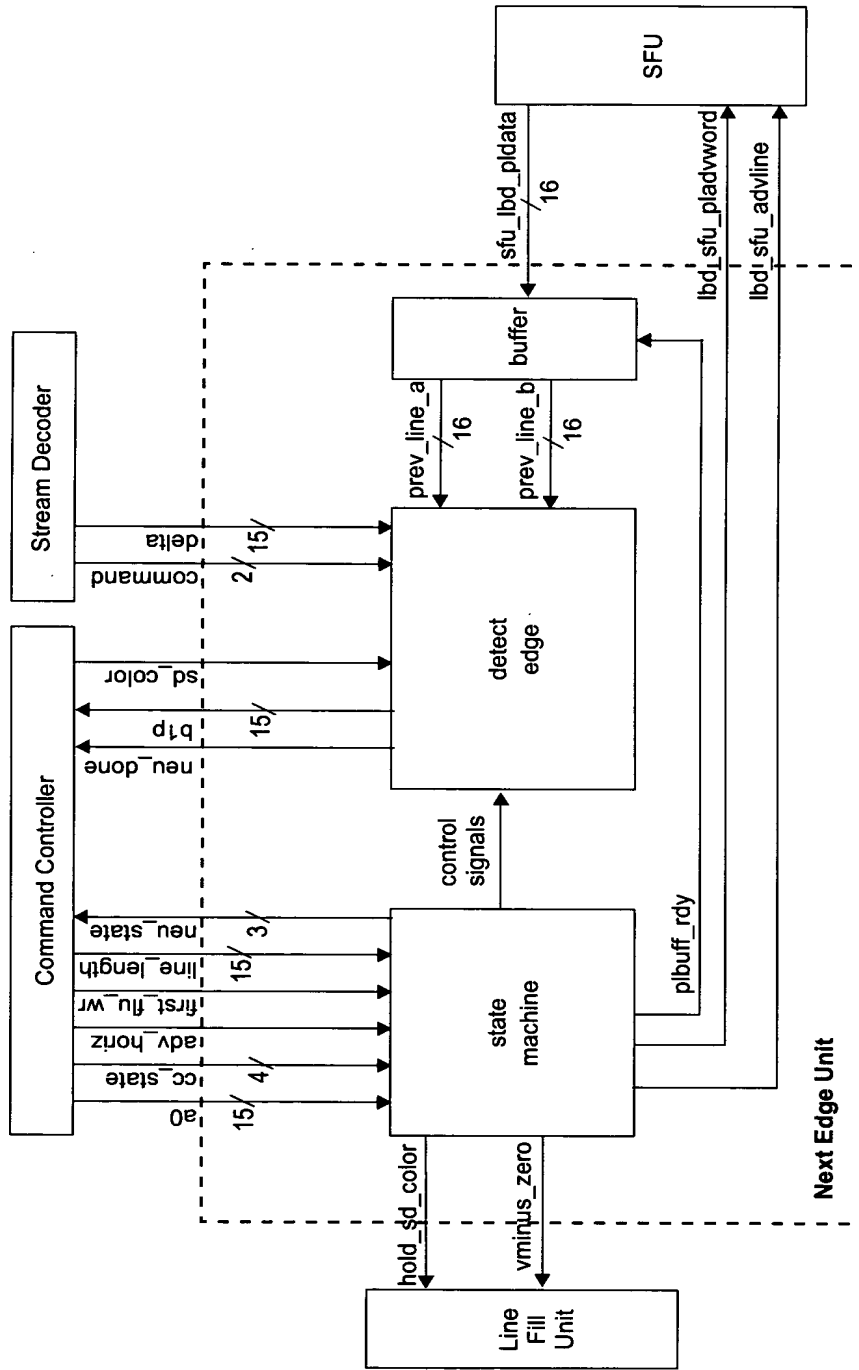
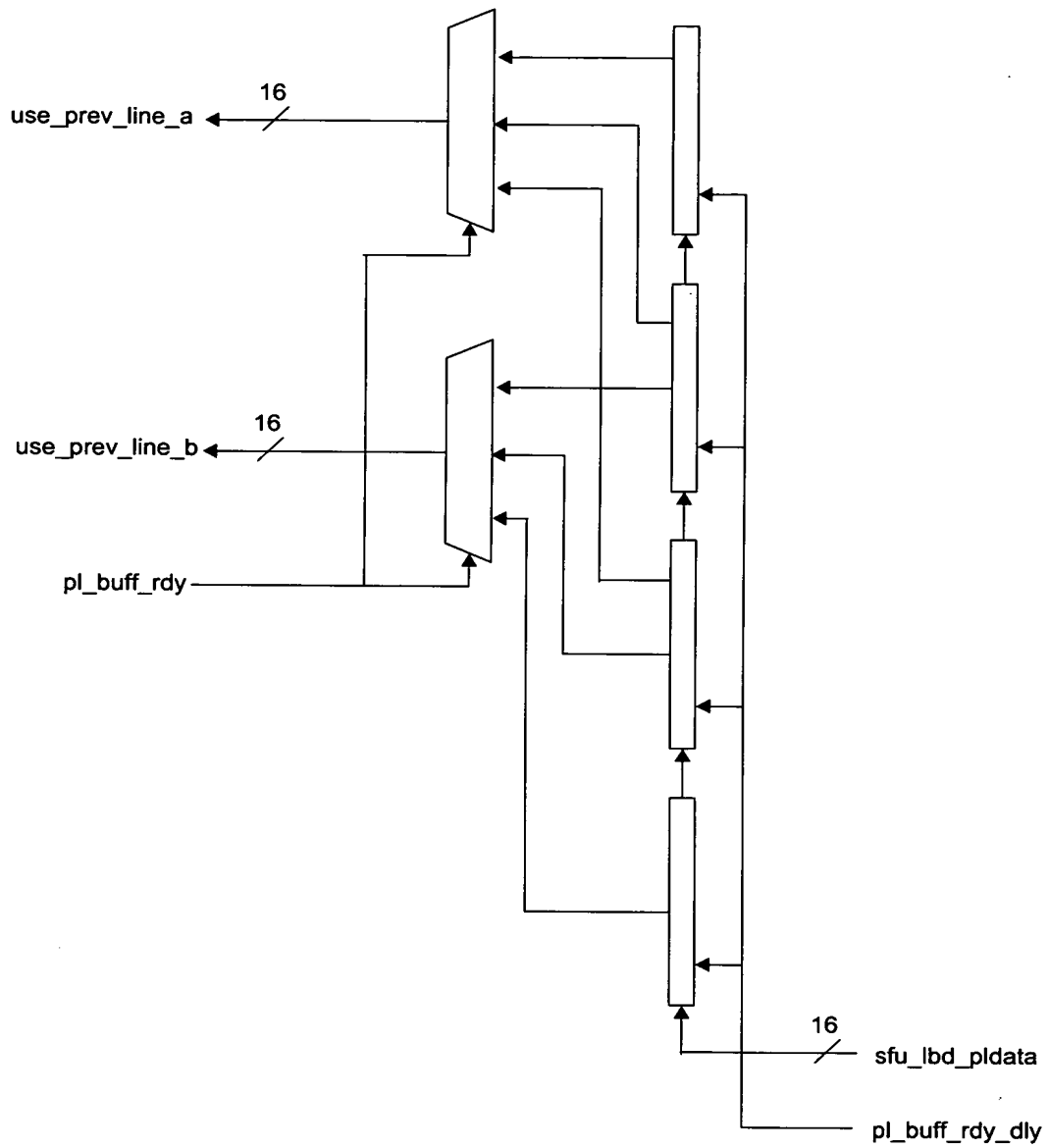


FIG. 152

*FIG. 153*

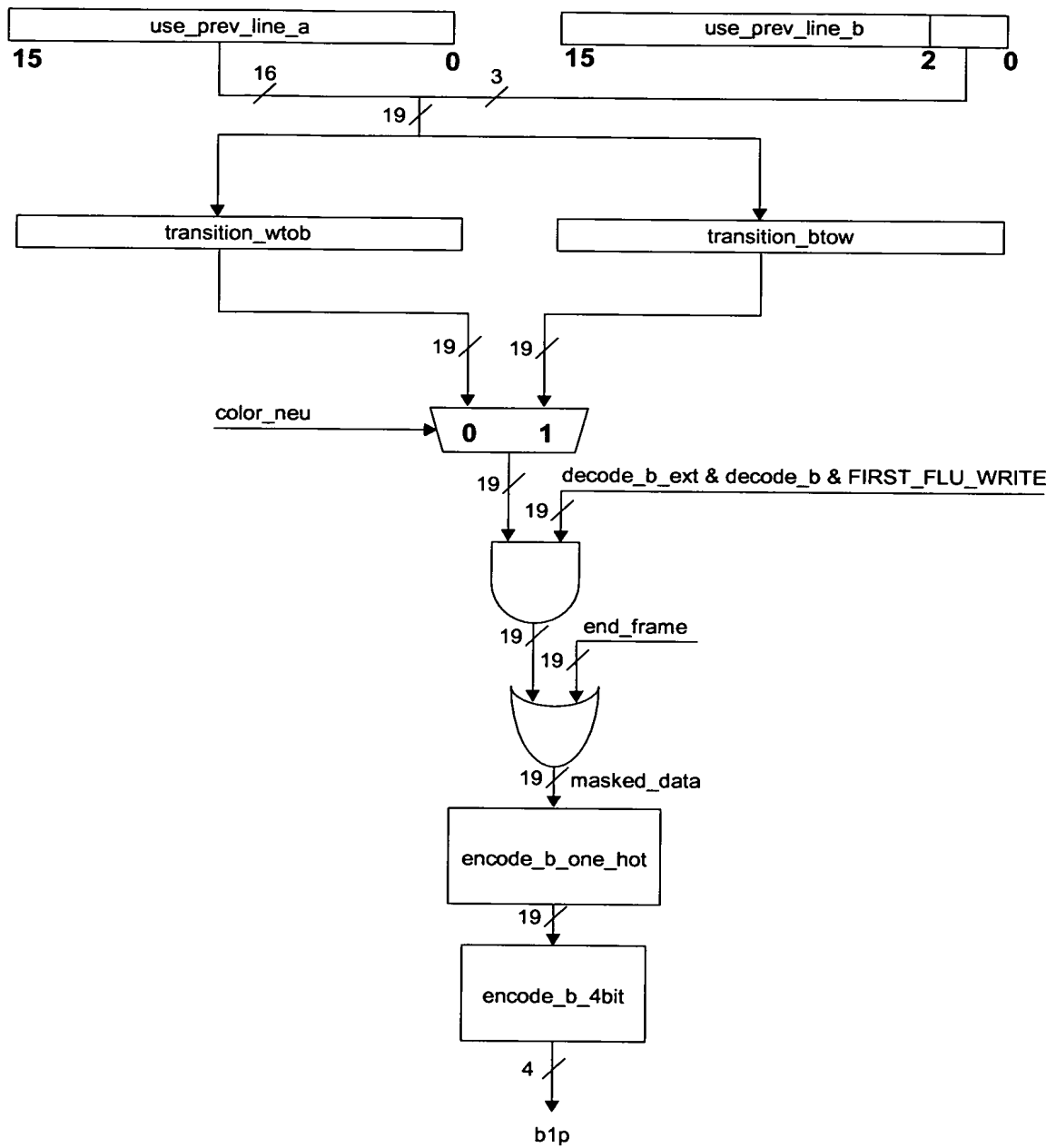
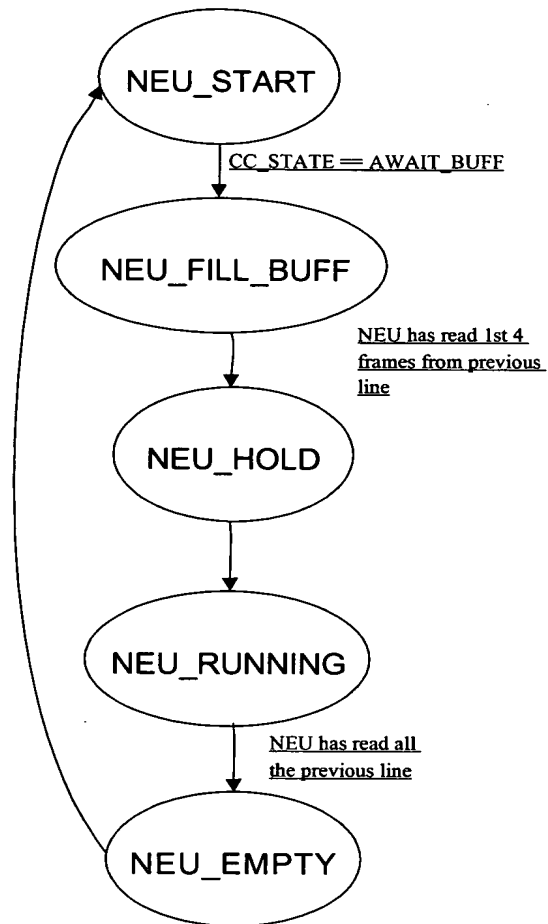


FIG. 154

*FIG. 155*

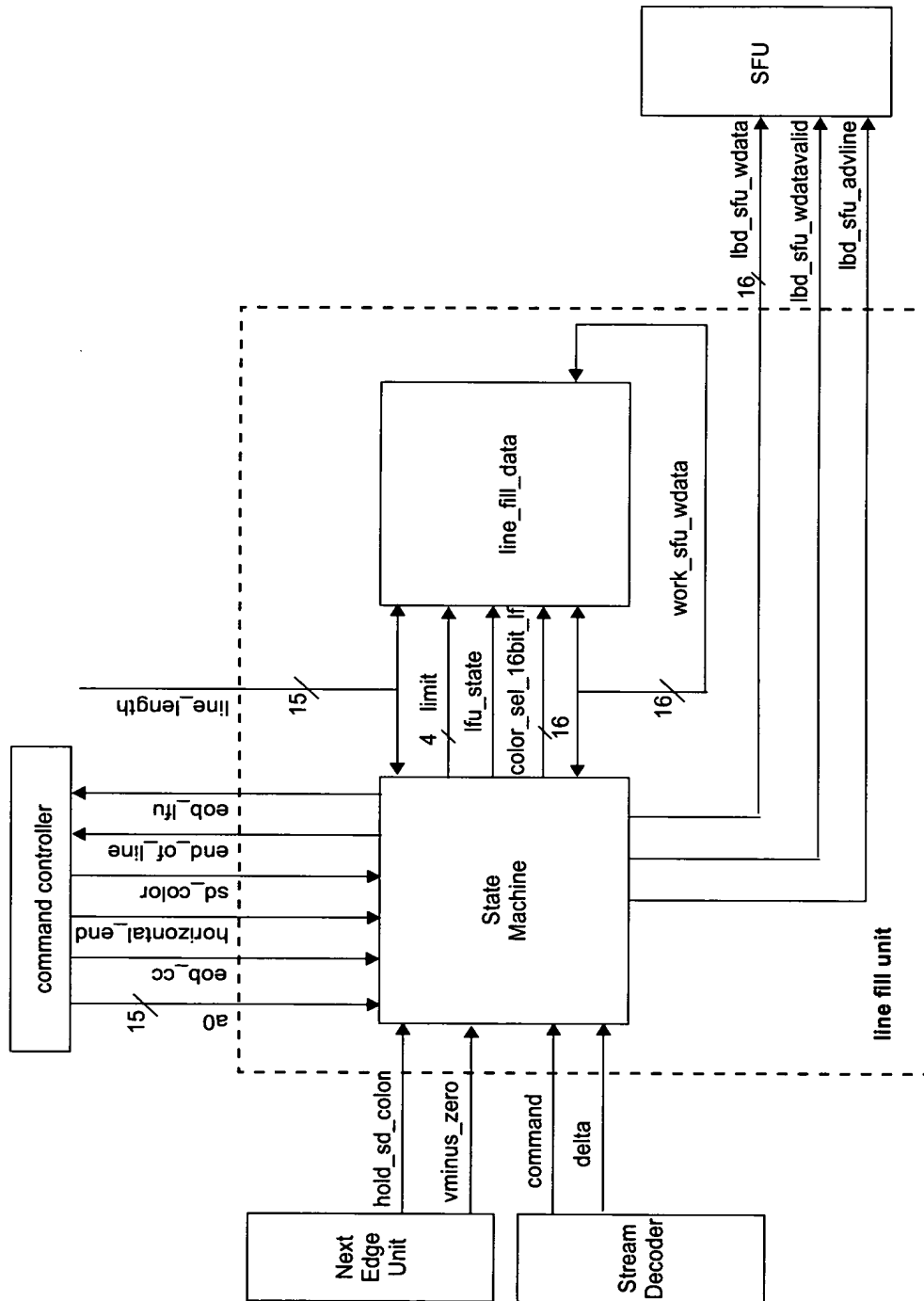


FIG. 156



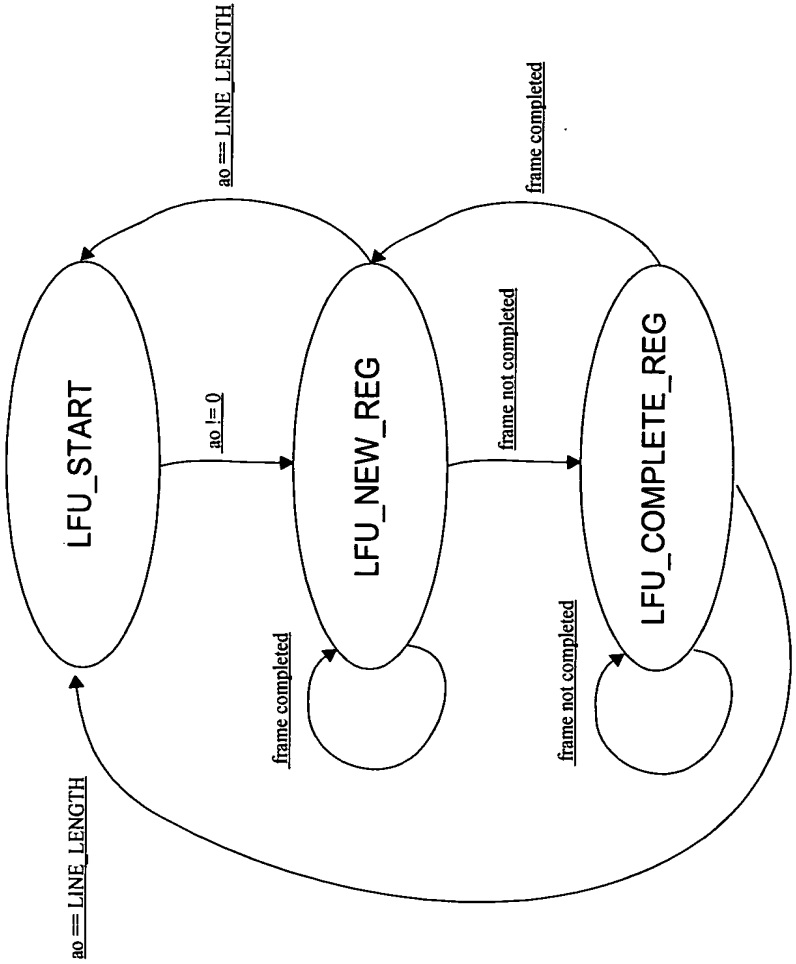


FIG. 157

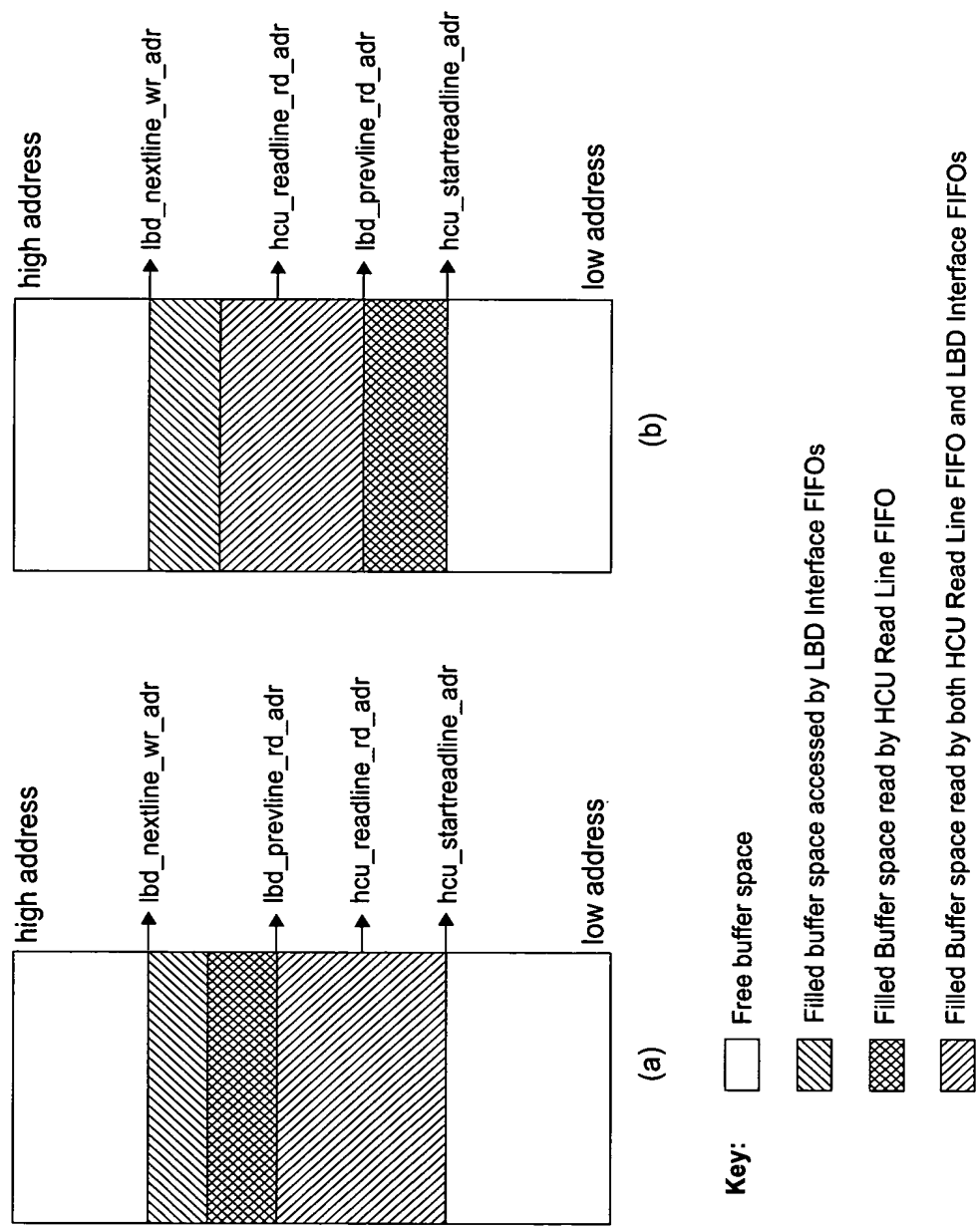


FIG. 158

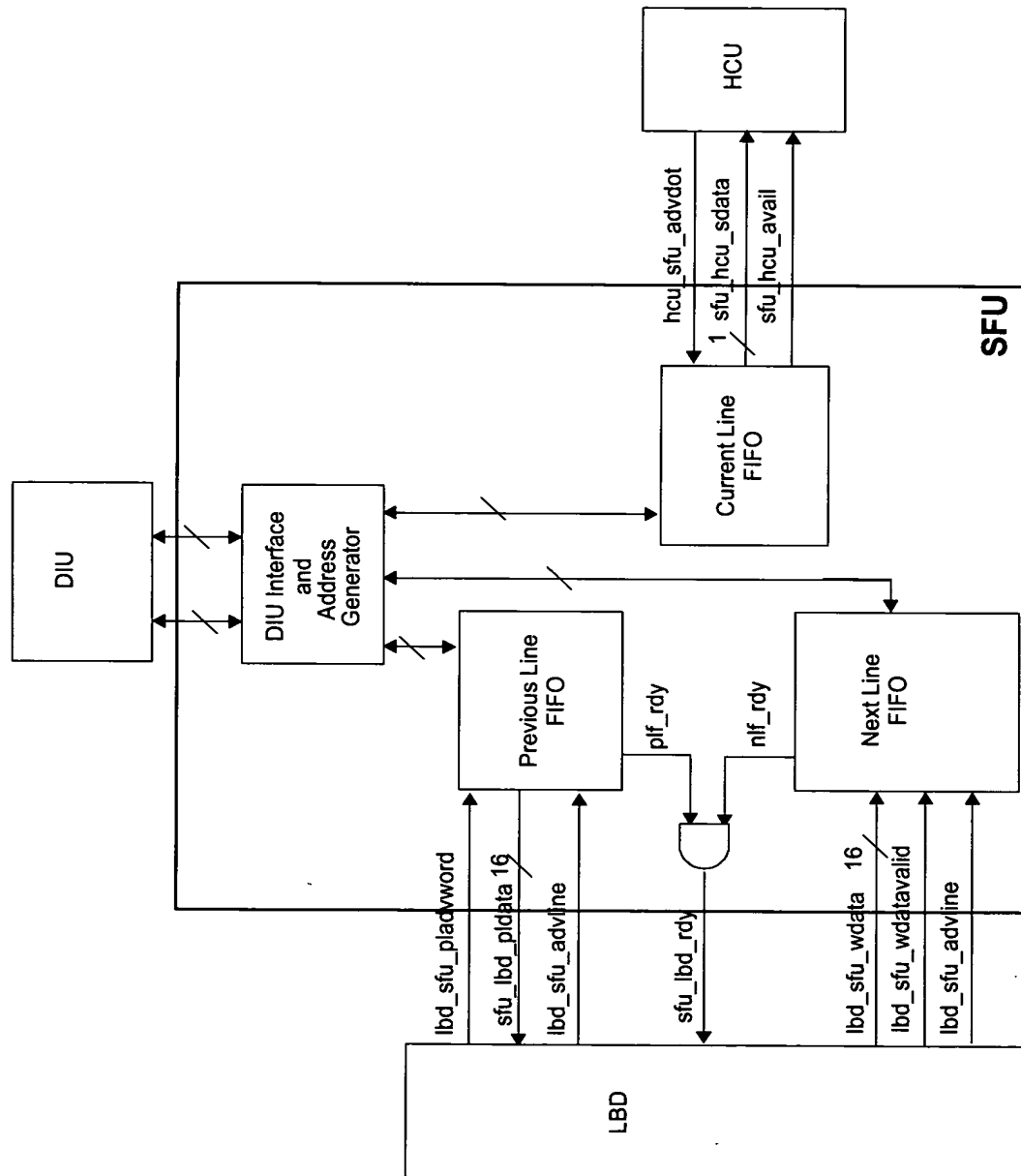


FIG. 159

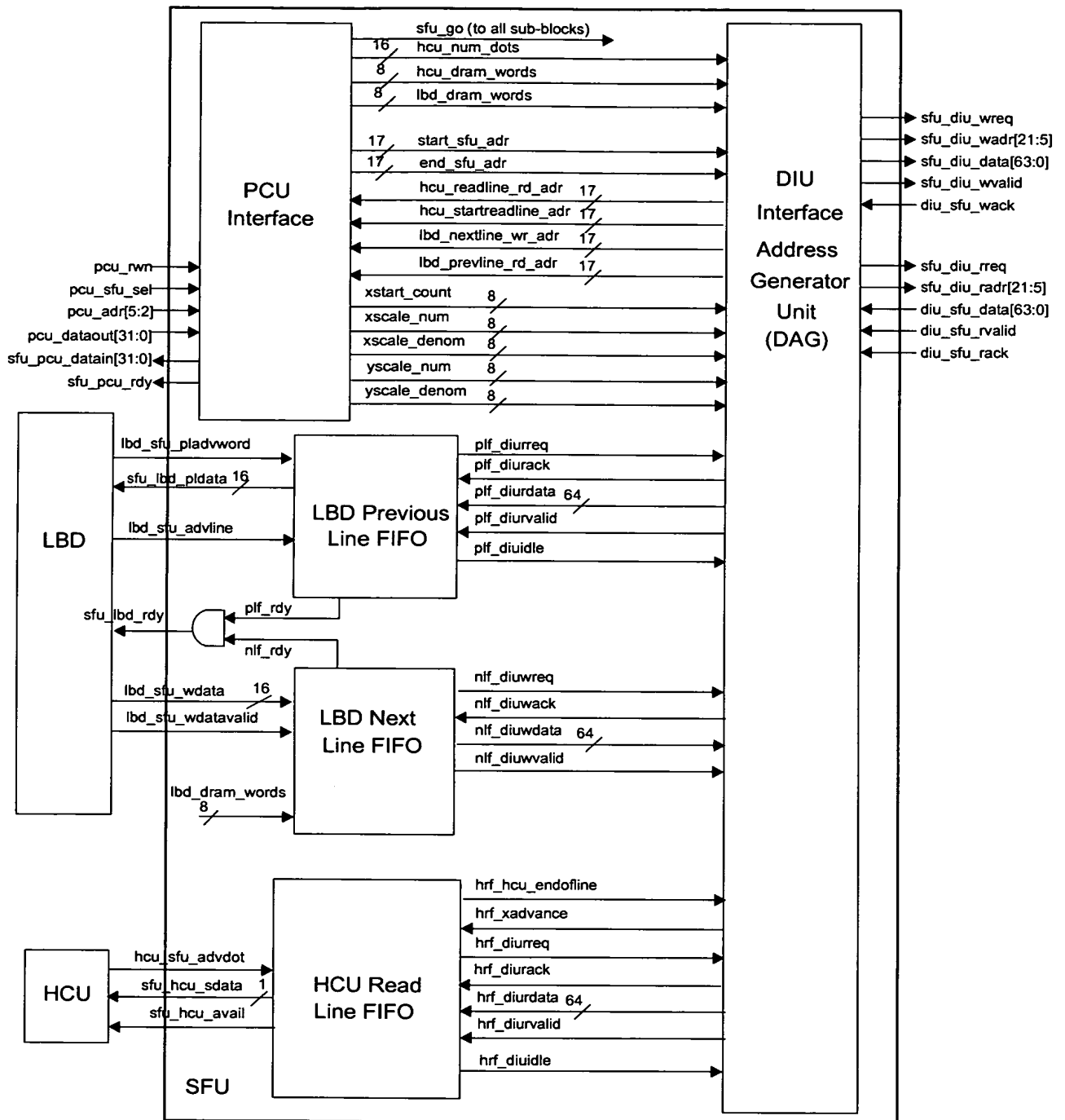


FIG. 160

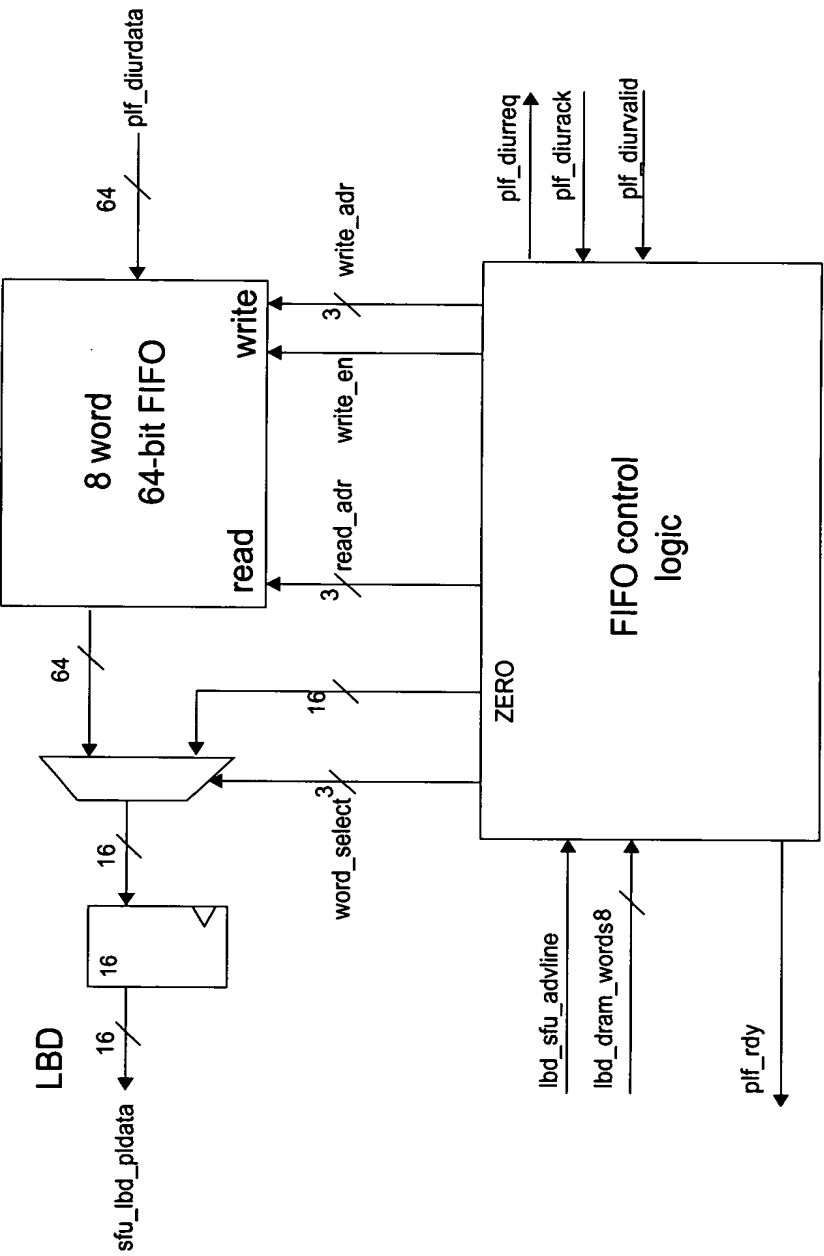


FIG. 161

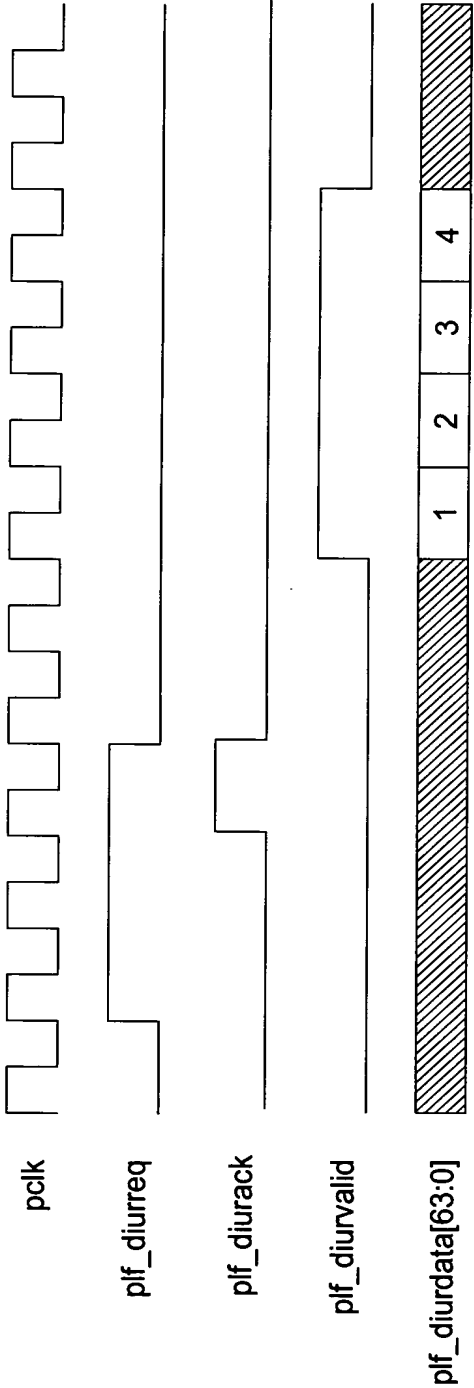


FIG. 162

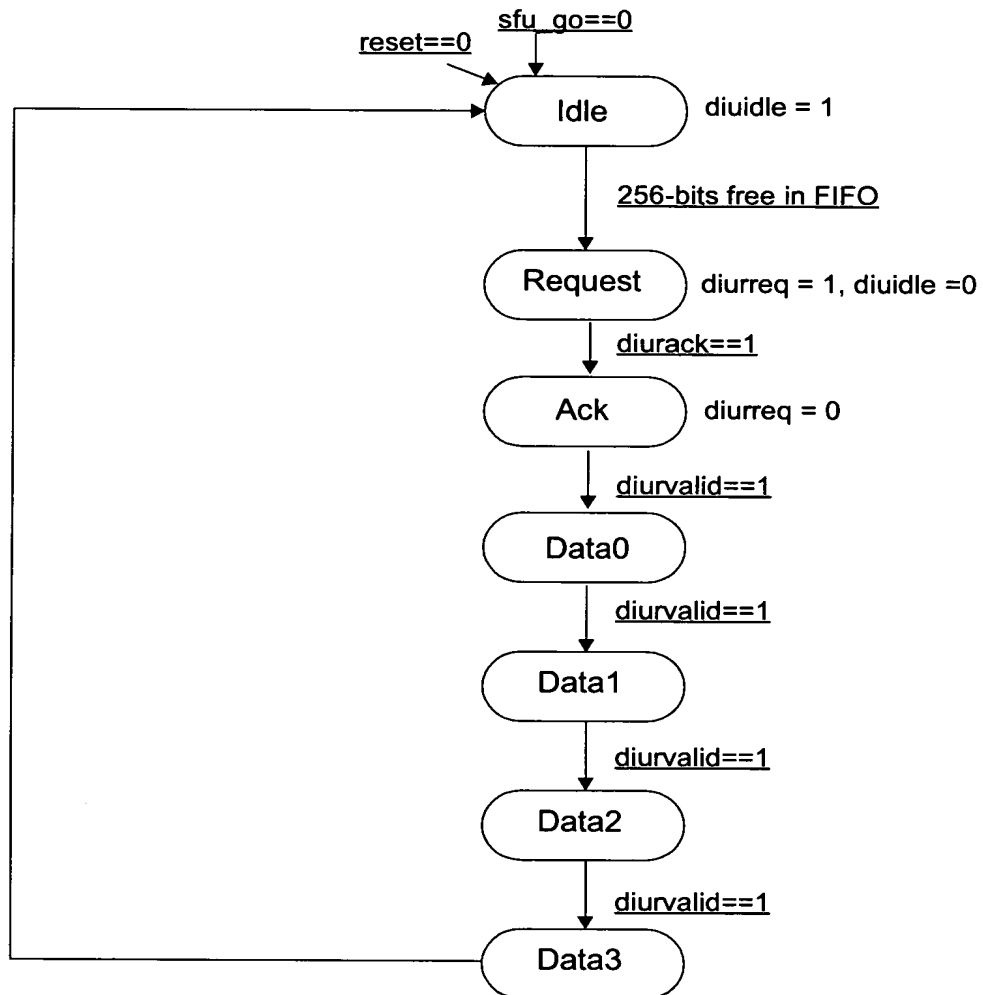


FIG. 163

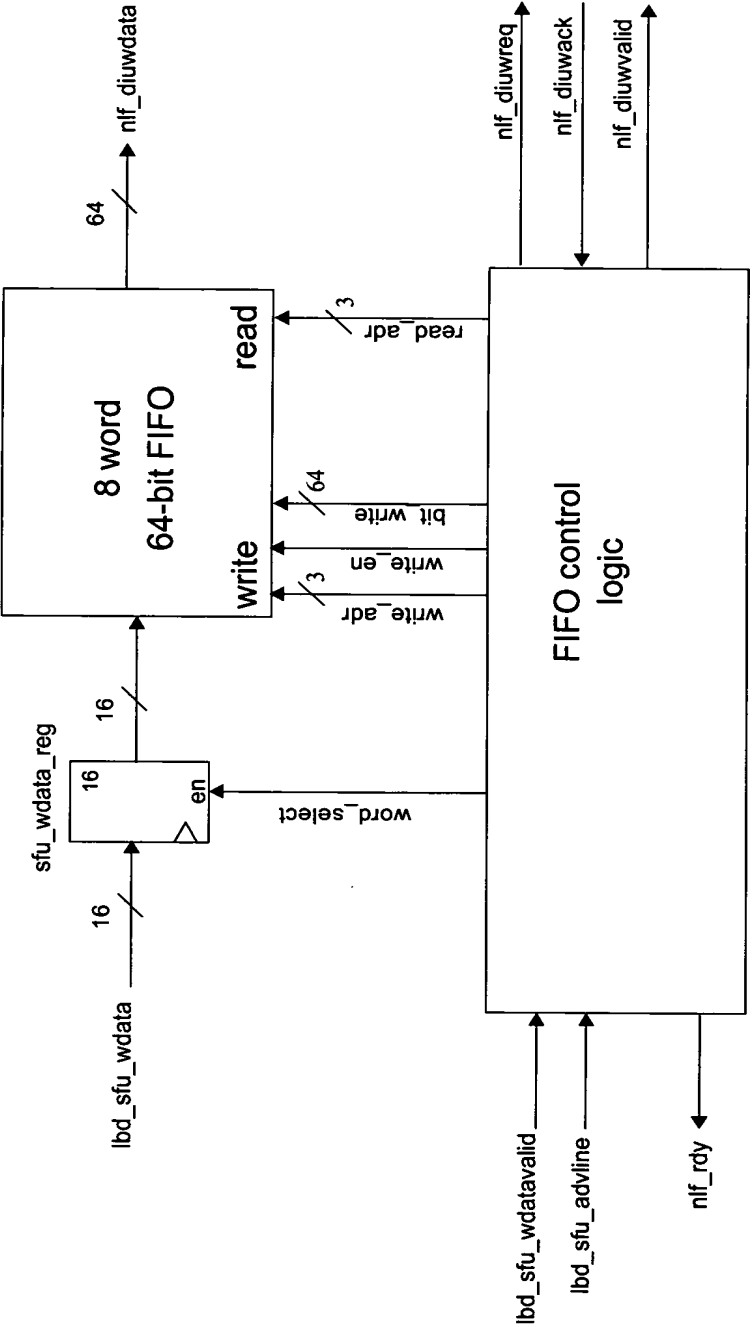


FIG. 164



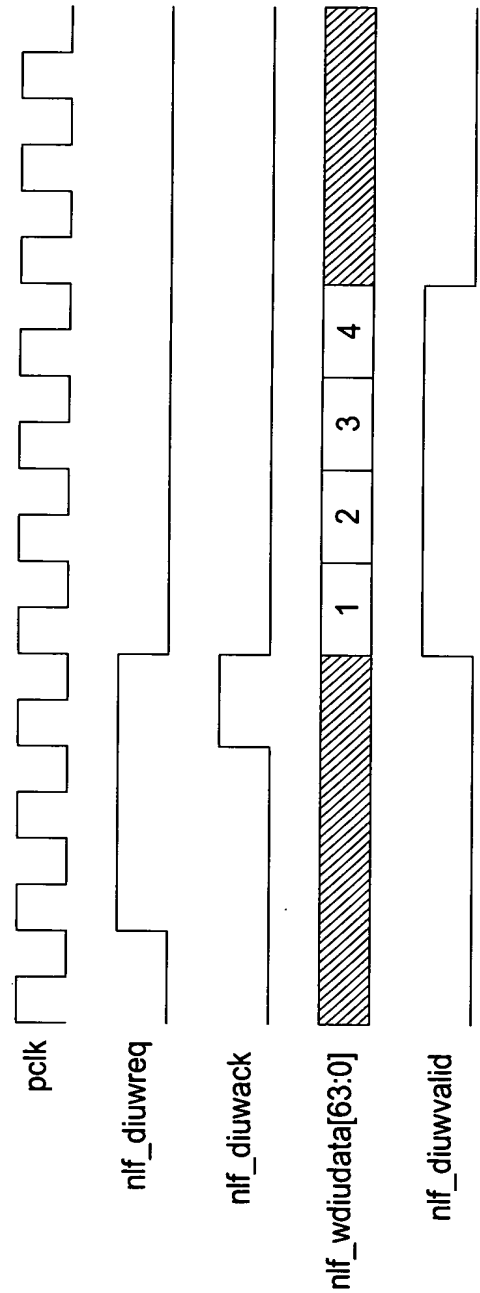


FIG. 165

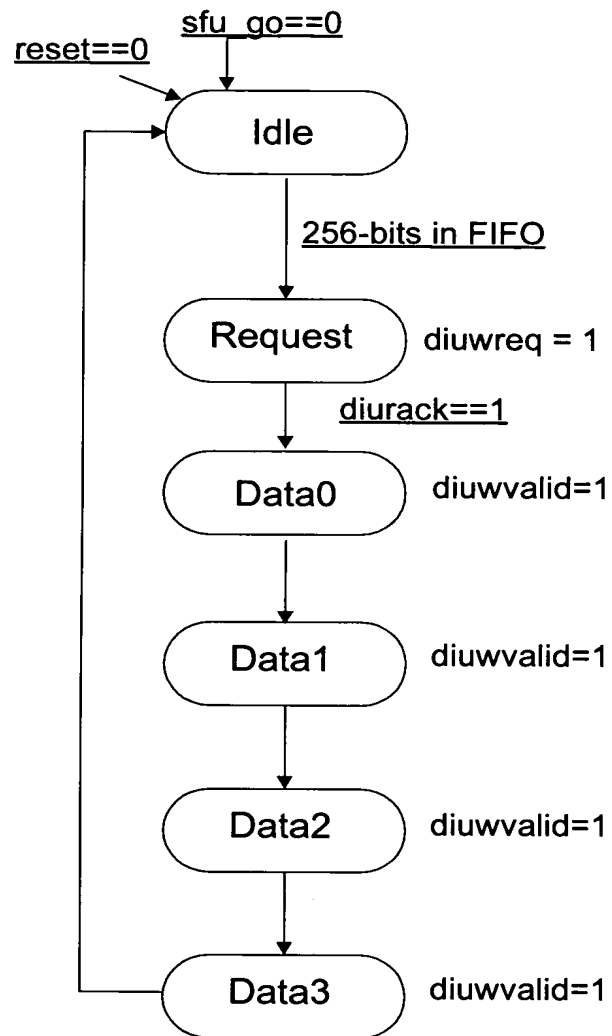


FIG. 166

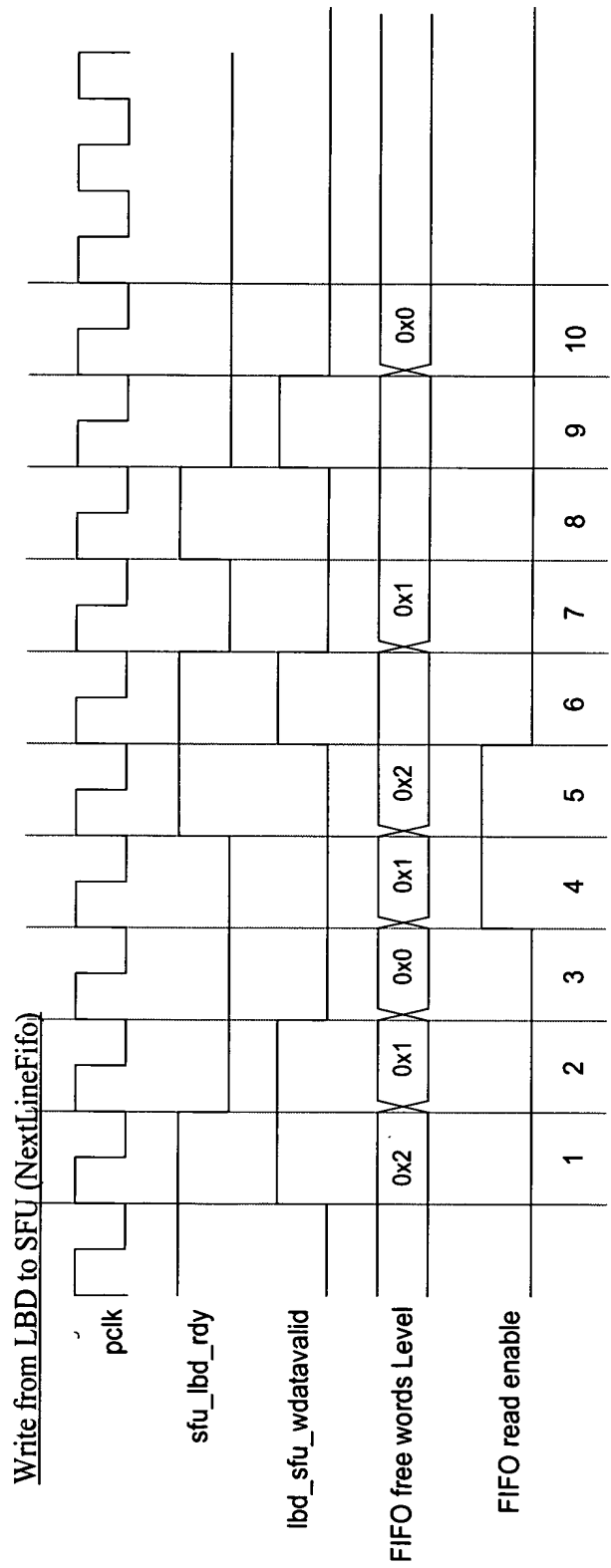


FIG. 167

Read from SFU to LBD (PreviousLineFifo)

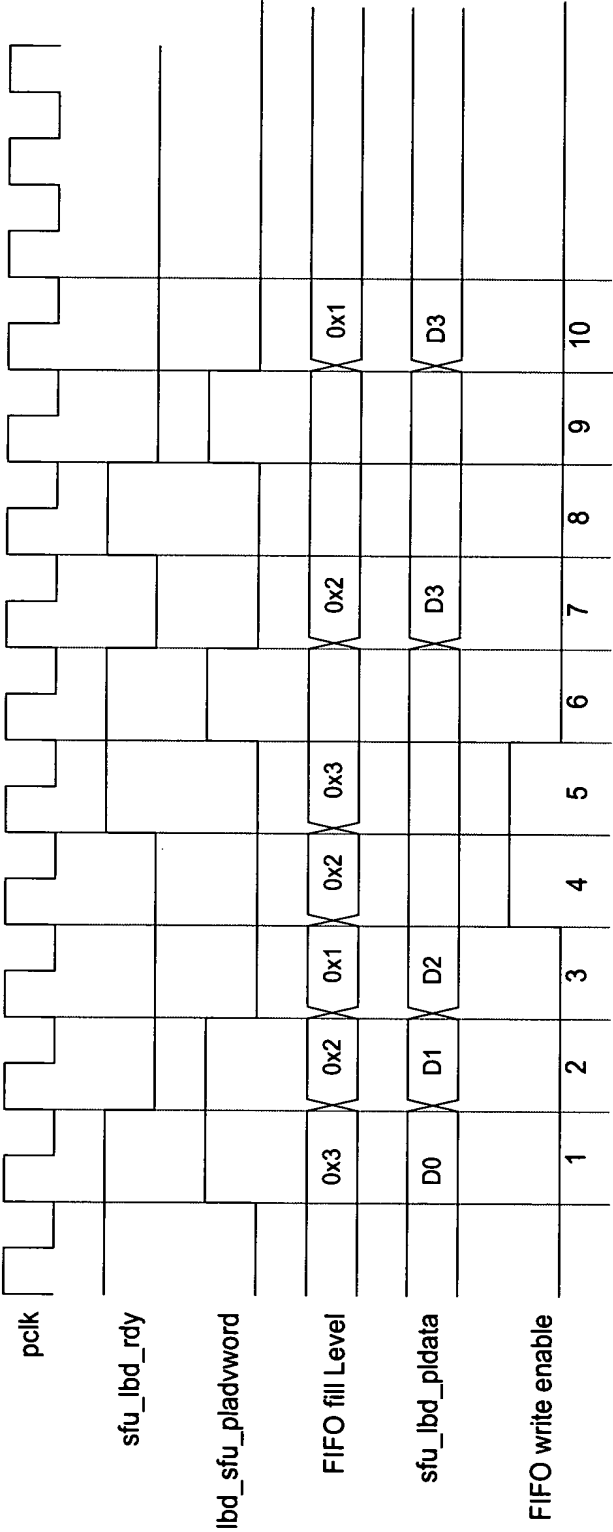


FIG. 168

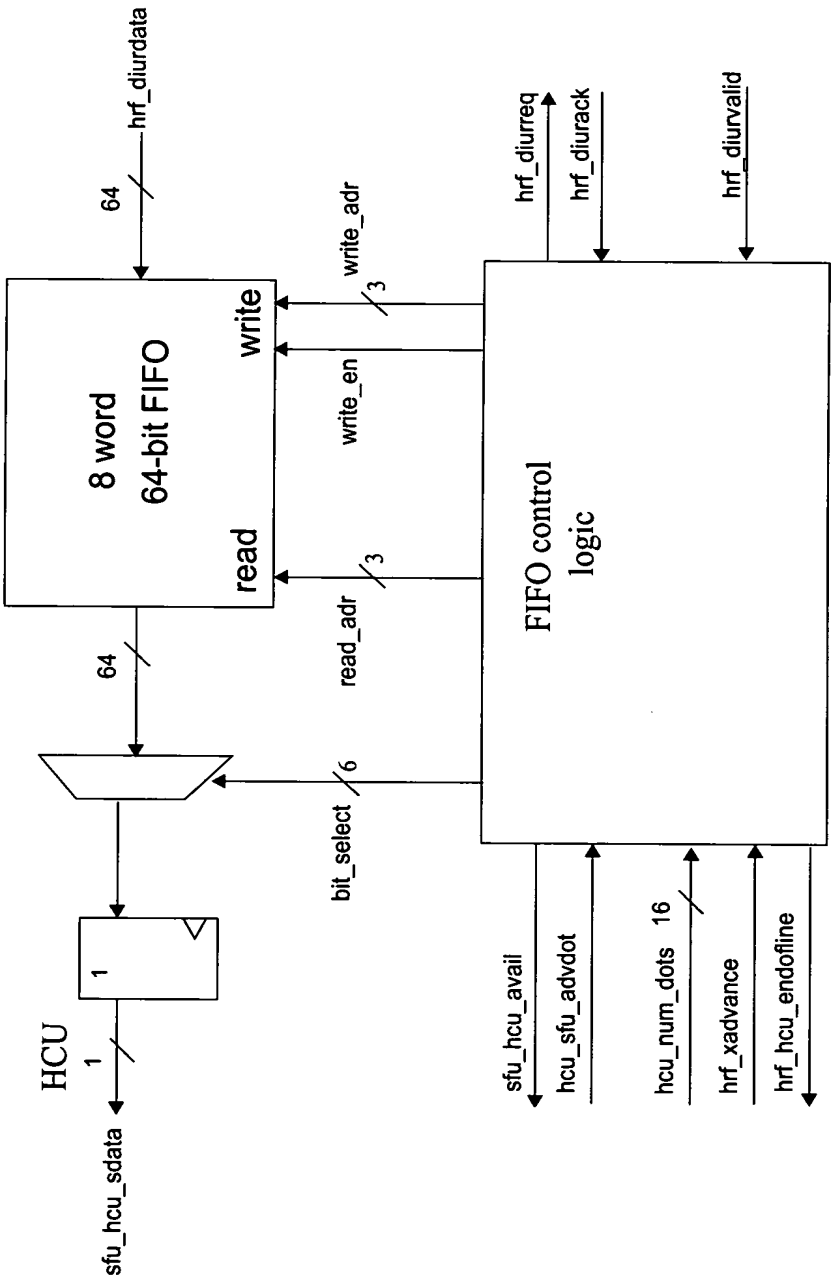


FIG. 169

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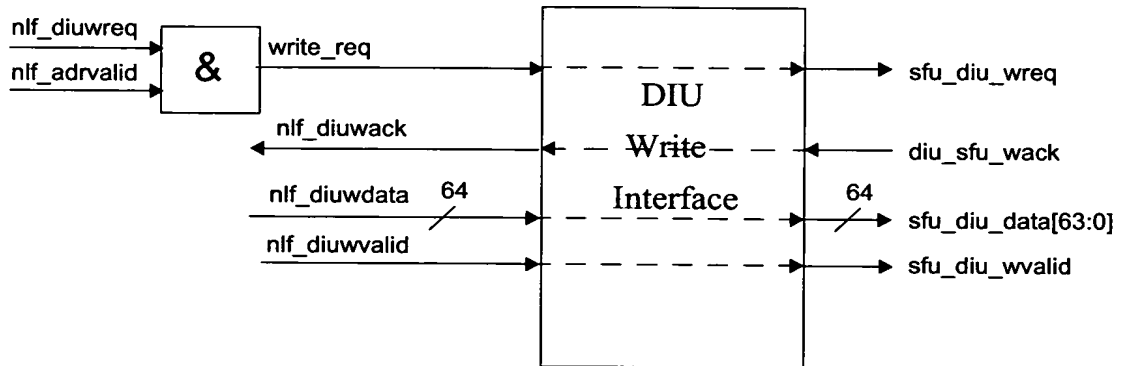


FIG. 170

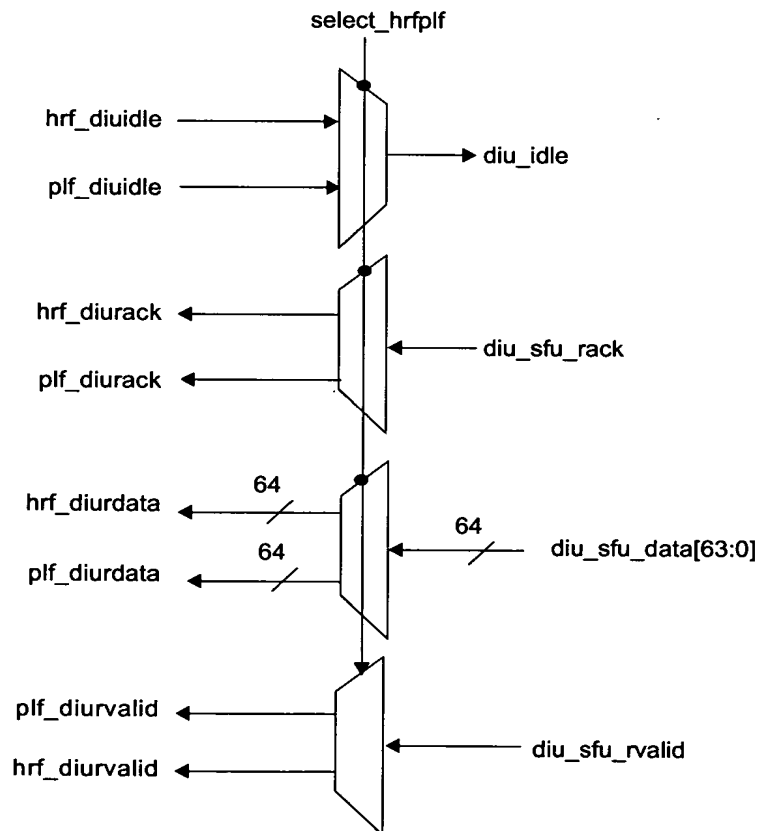


FIG. 171

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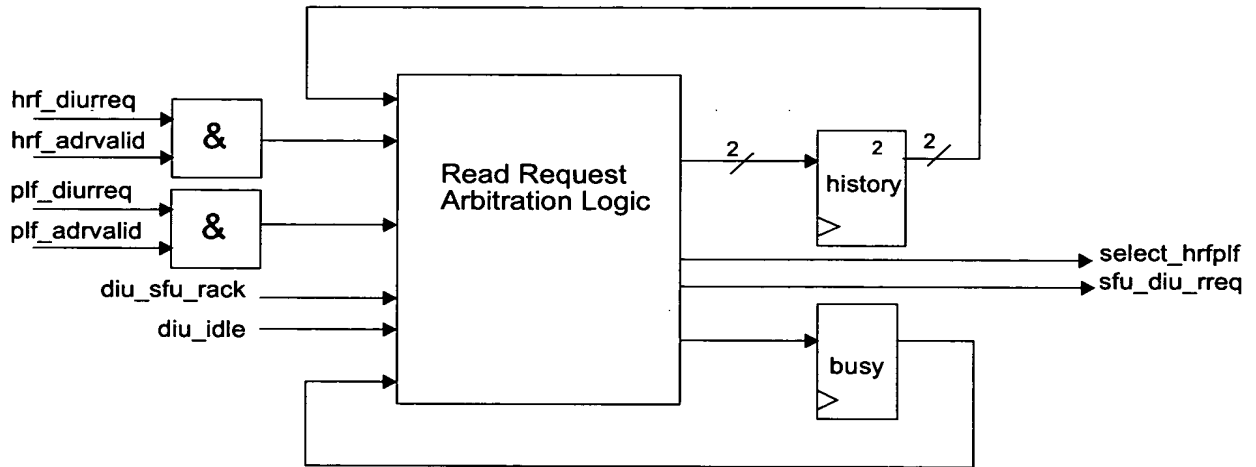


FIG. 172

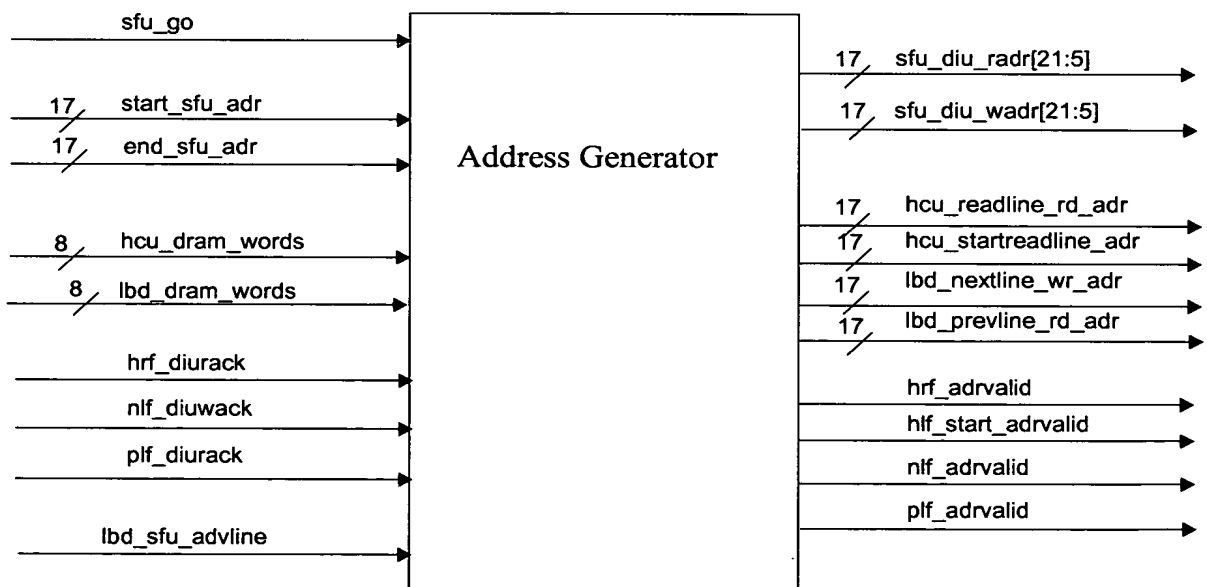
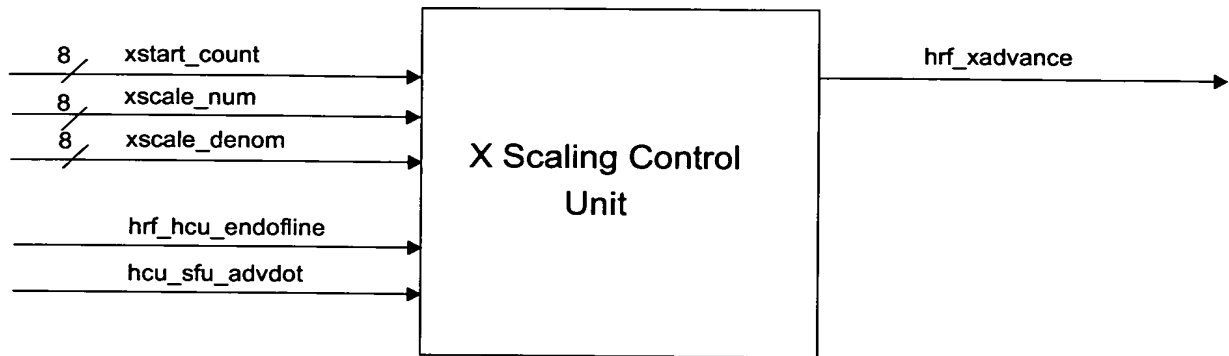
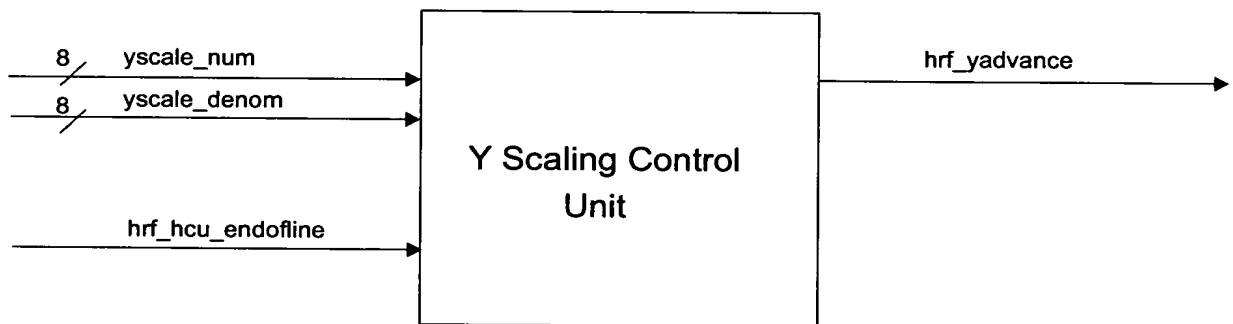


FIG. 173

*FIG. 174**FIG. 175*



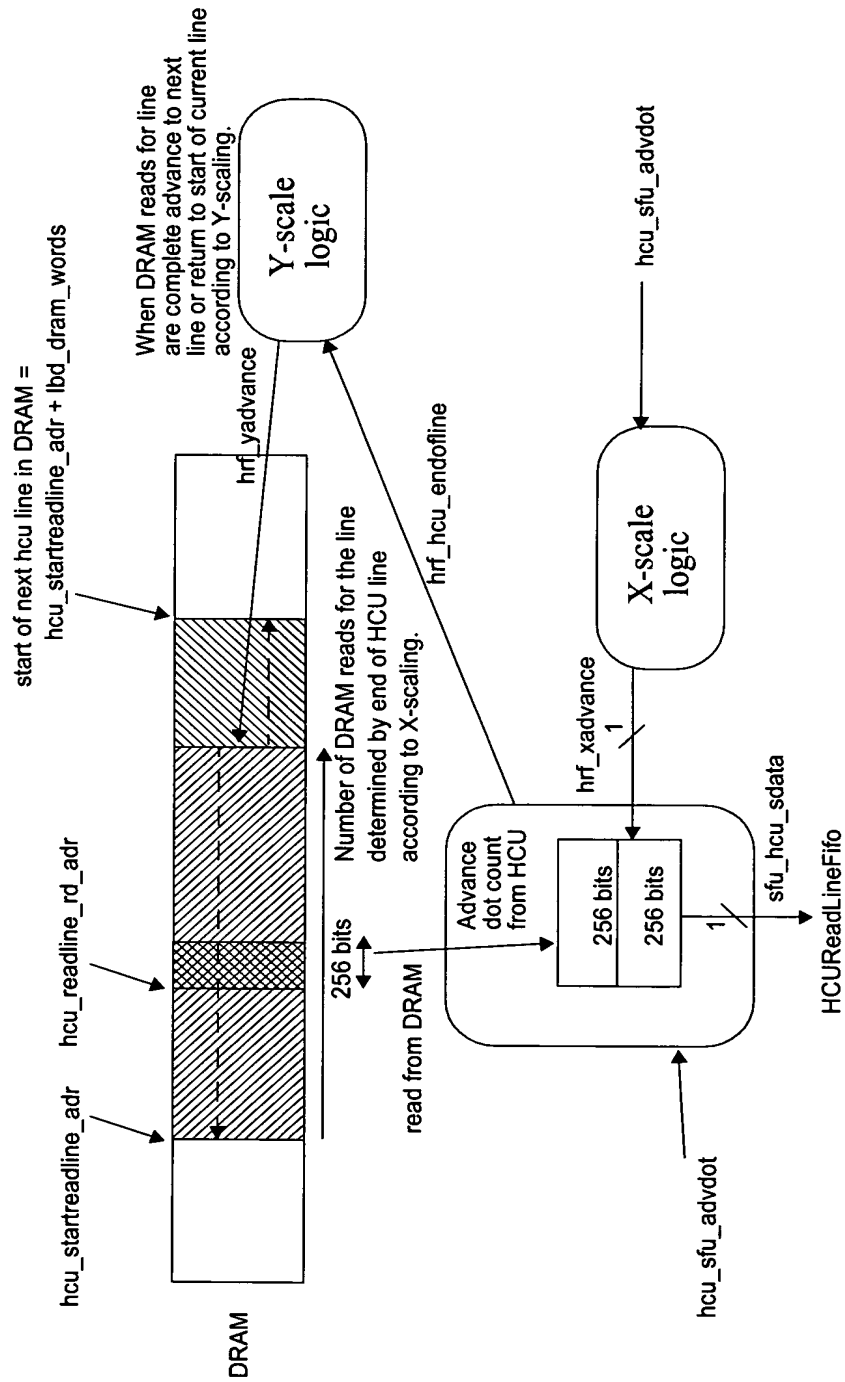


FIG. 176

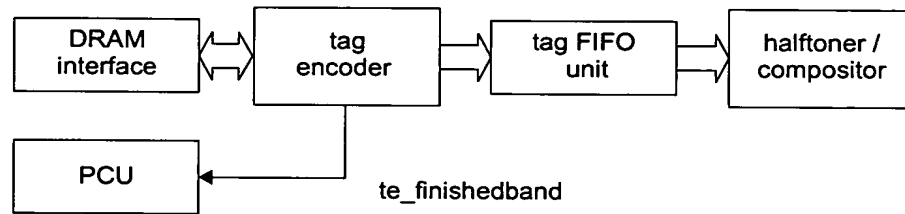


FIG. 177

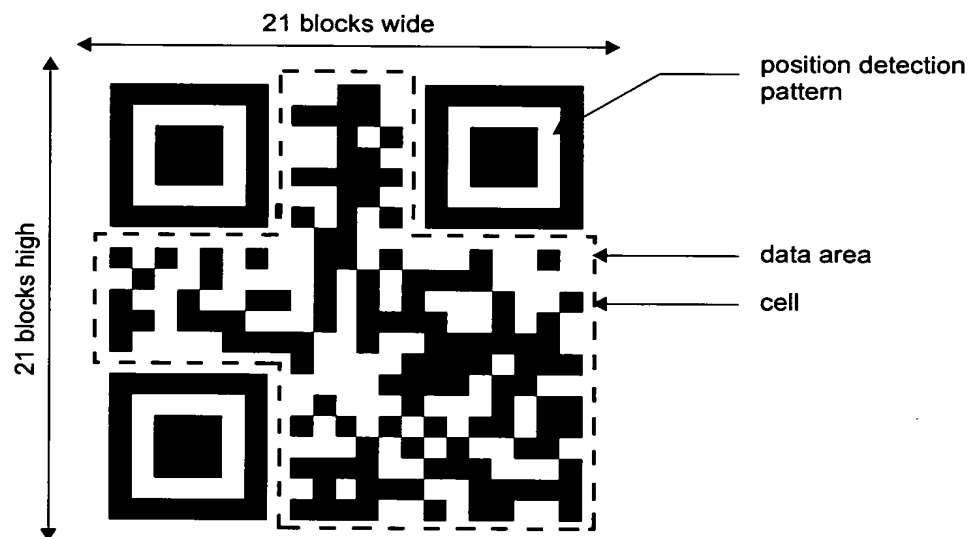
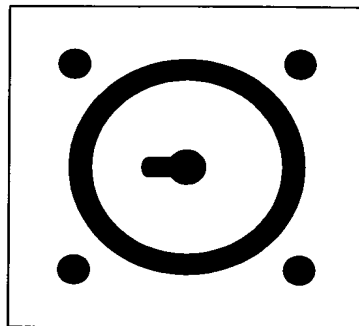
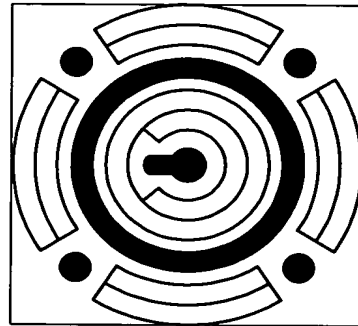


FIG. 178

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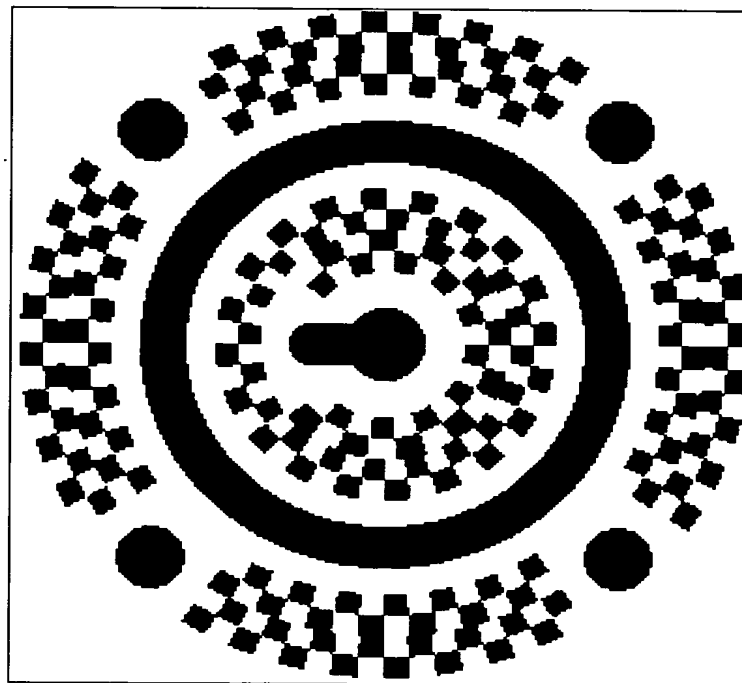


(a) Netpage tag background pattern



(b) Netpage tag showing data area

*FIG. 179*



*FIG. 180*

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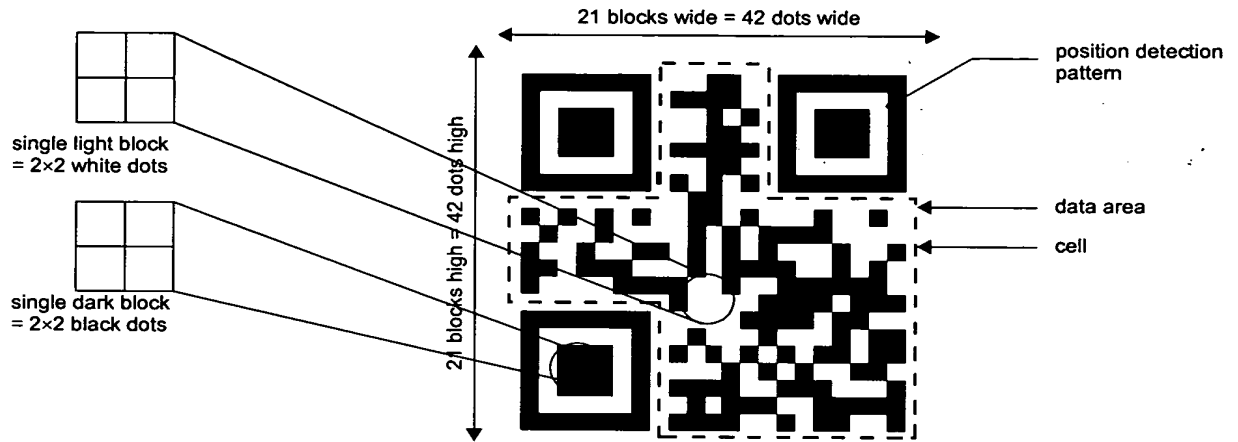


FIG. 181

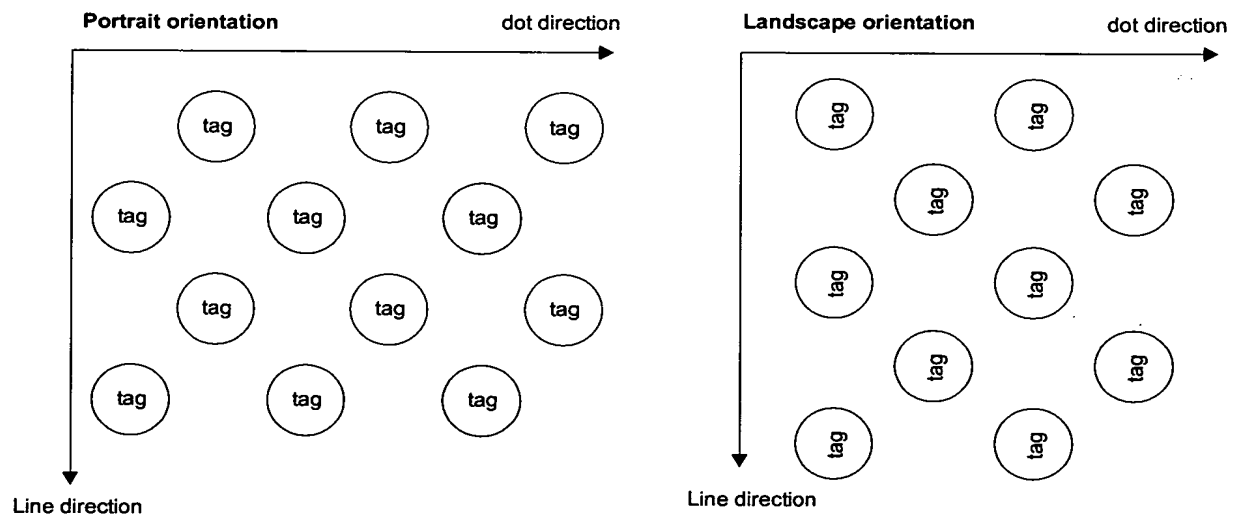


FIG. 182

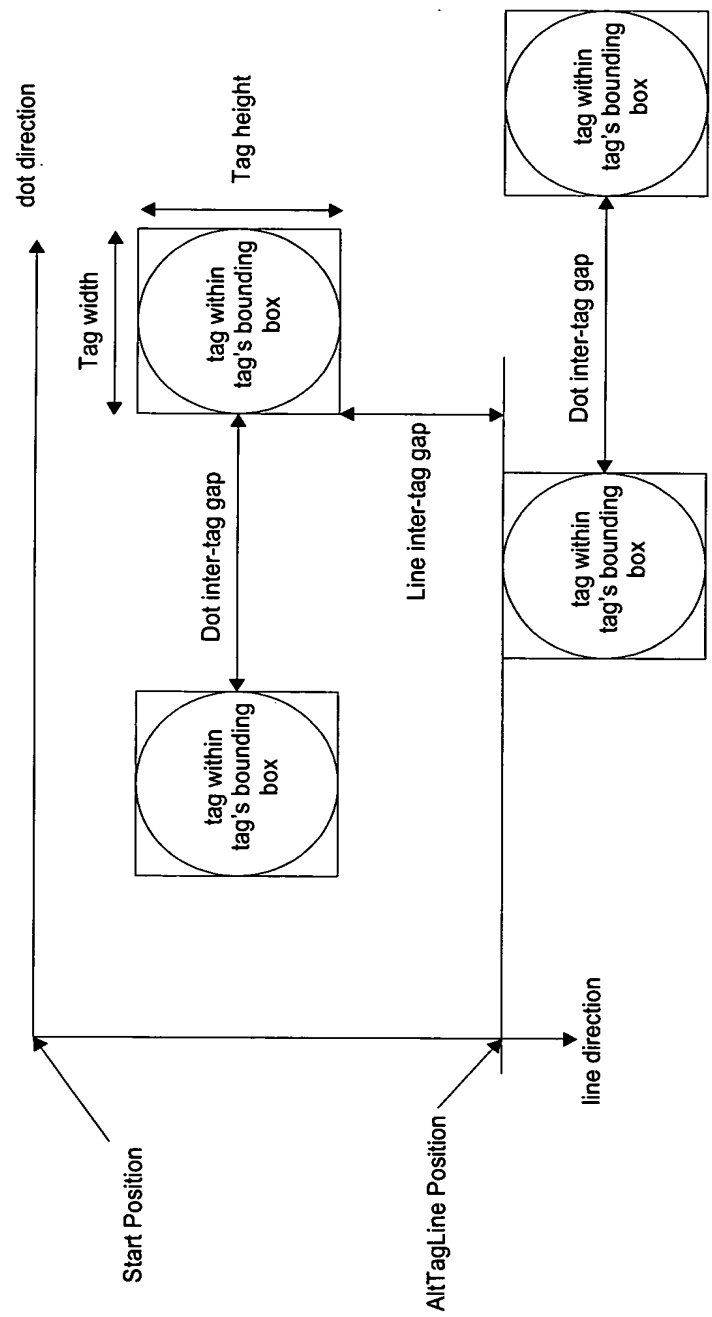


FIG. 183

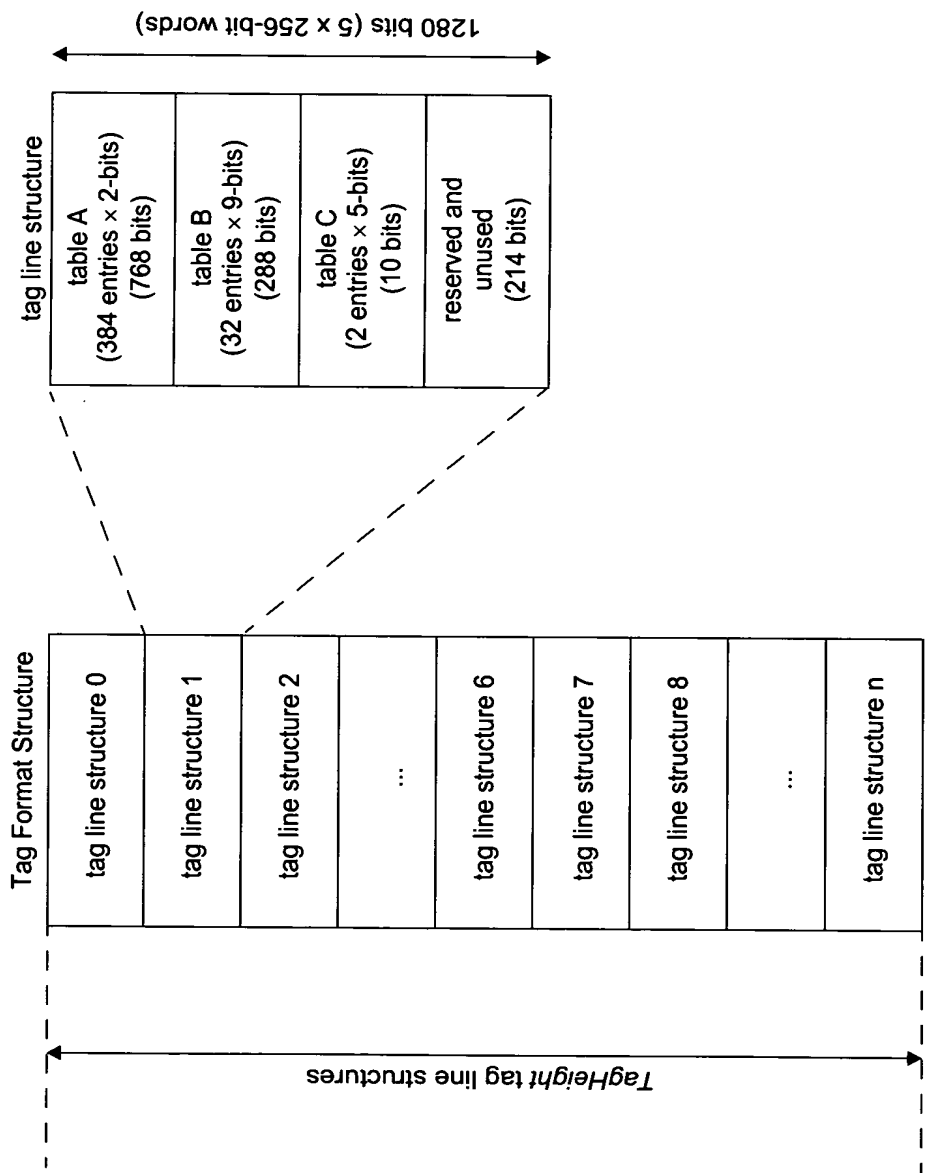


FIG. 184

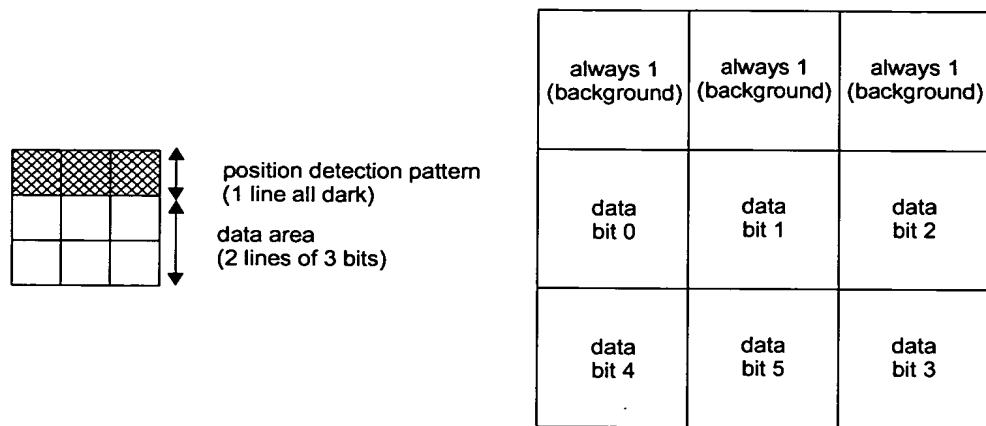


FIG. 185

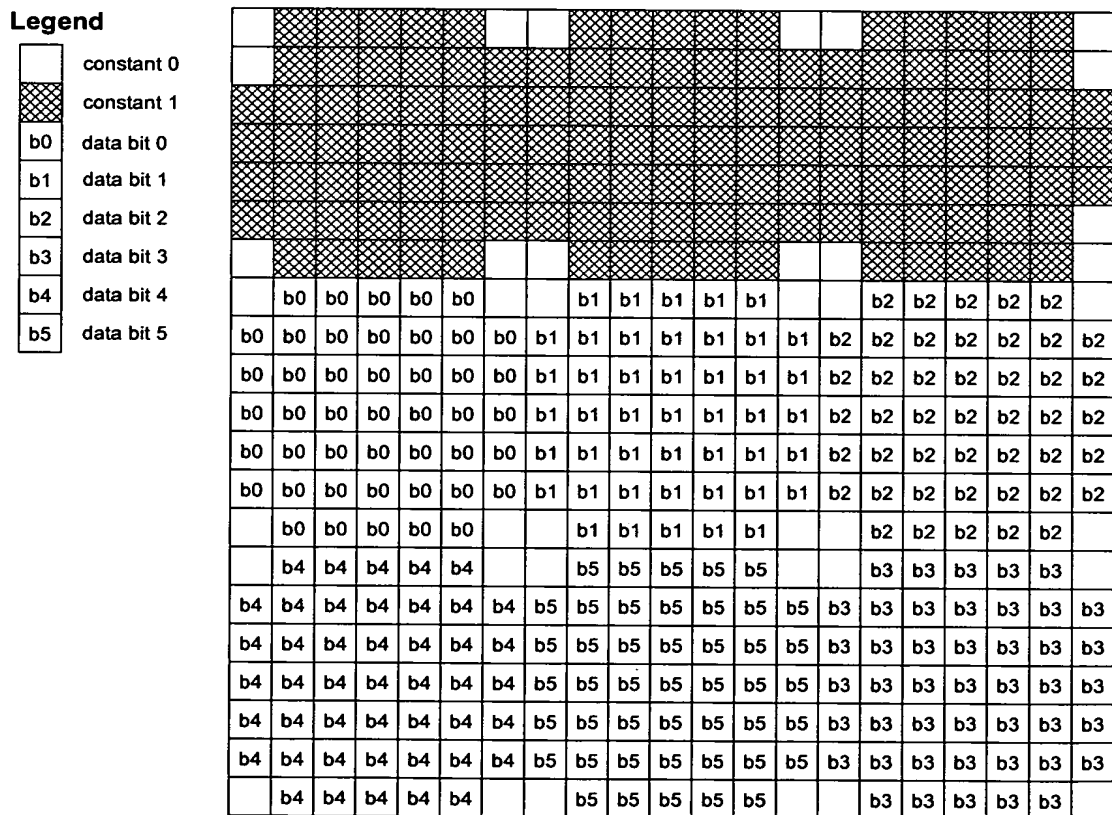


FIG. 186

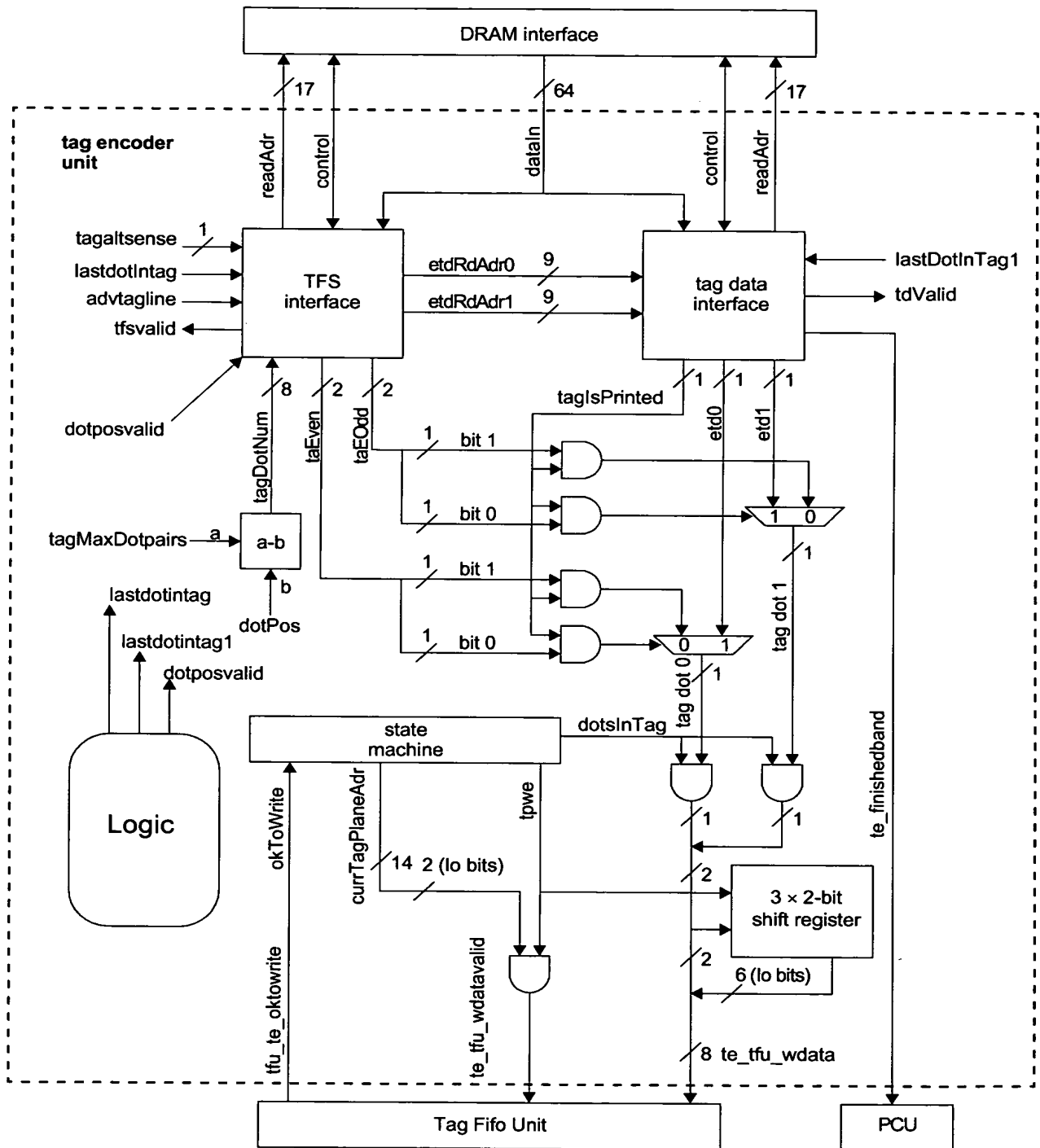


FIG. 187



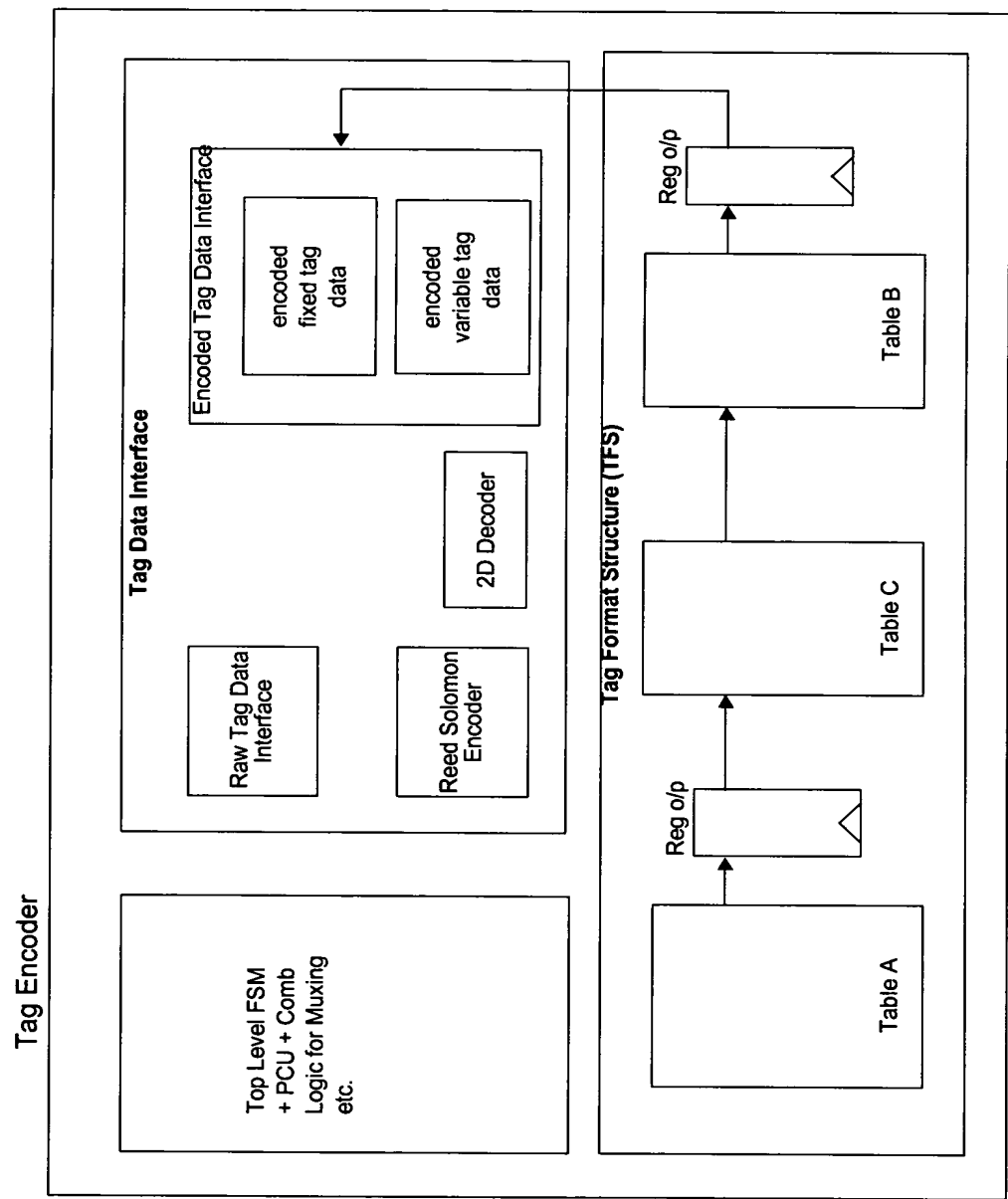


FIG. 188

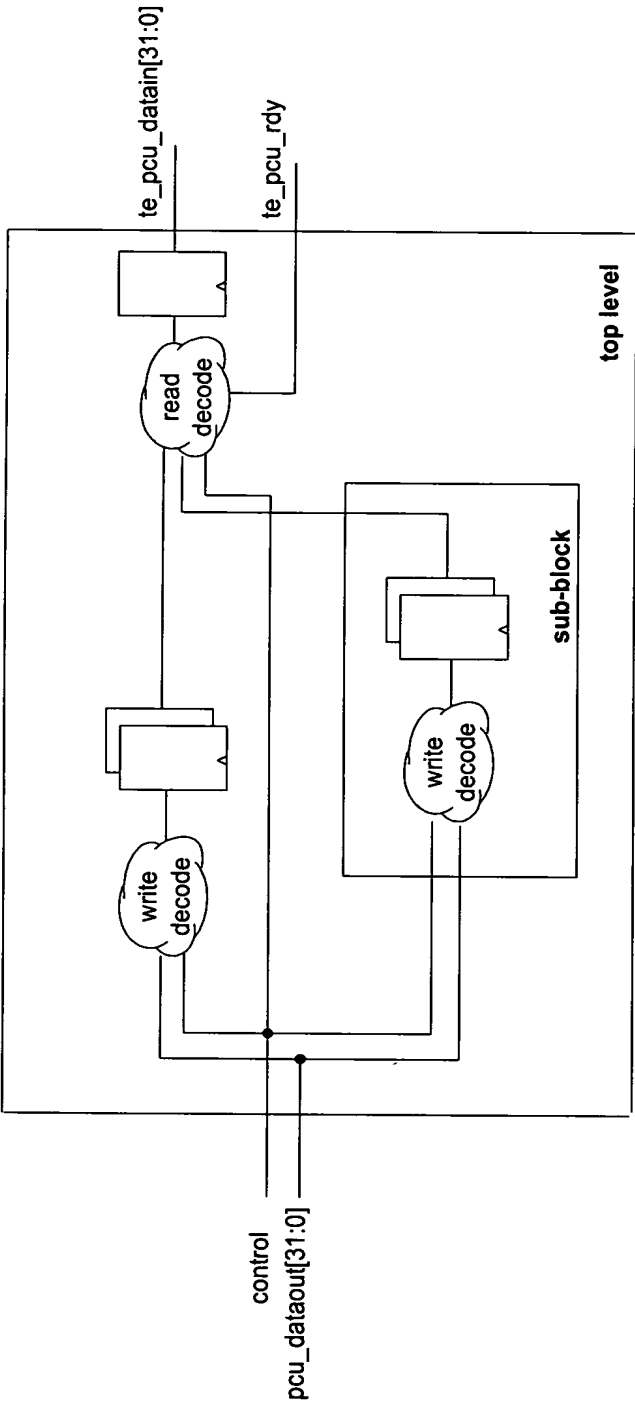


FIG. 189

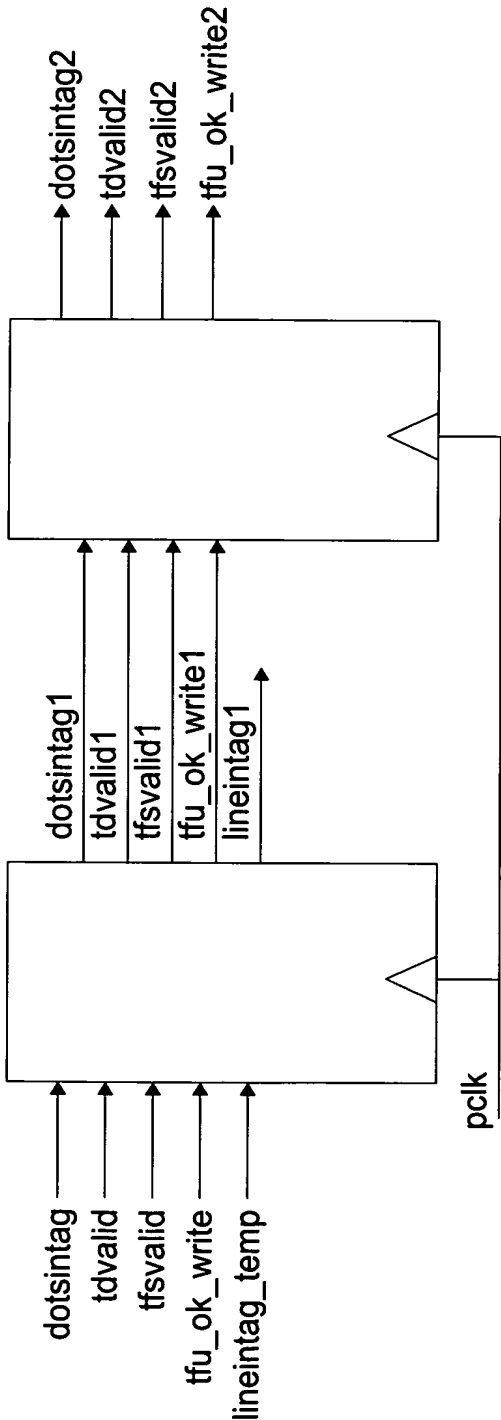


FIG. 191

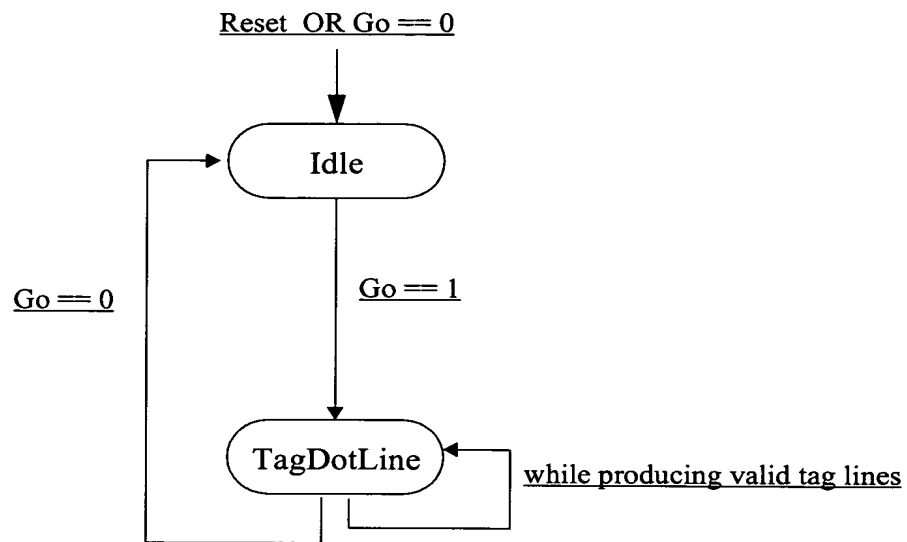


FIG. 190

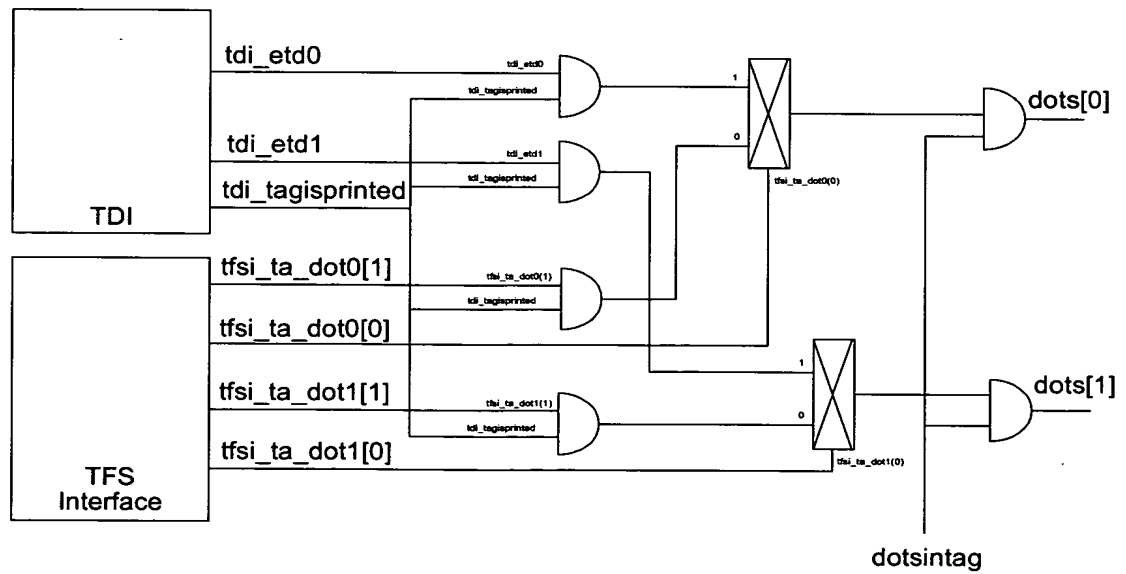


FIG. 192

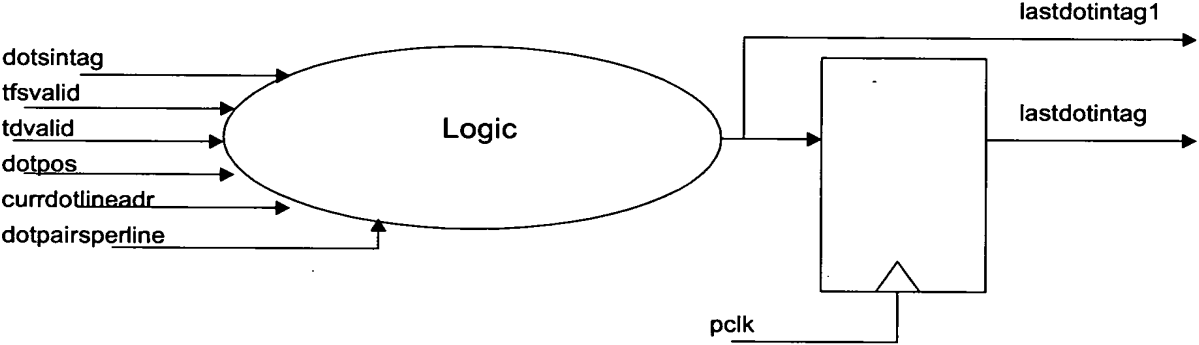


FIG. 193

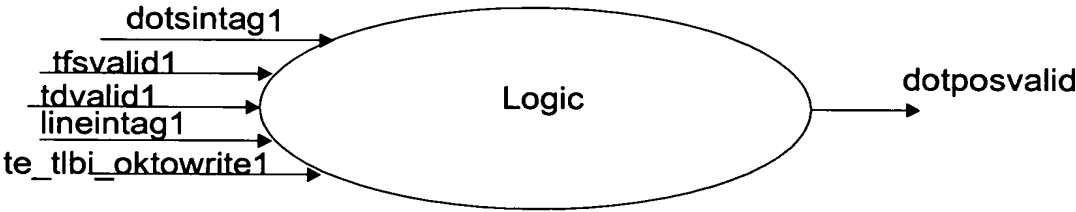


FIG. 194

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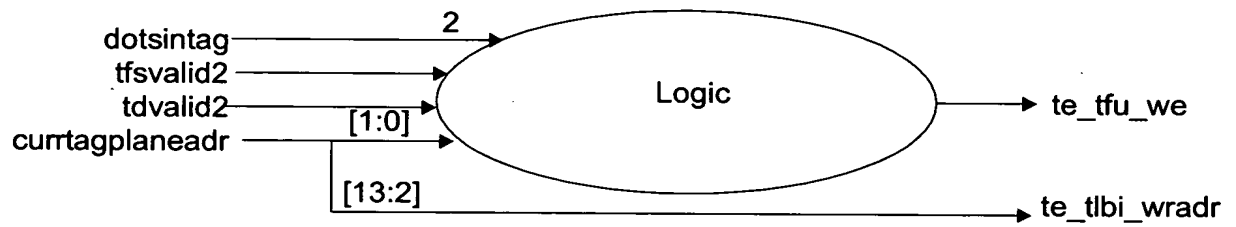


FIG. 195

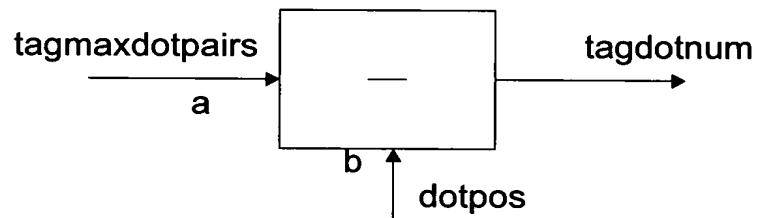


FIG. 196

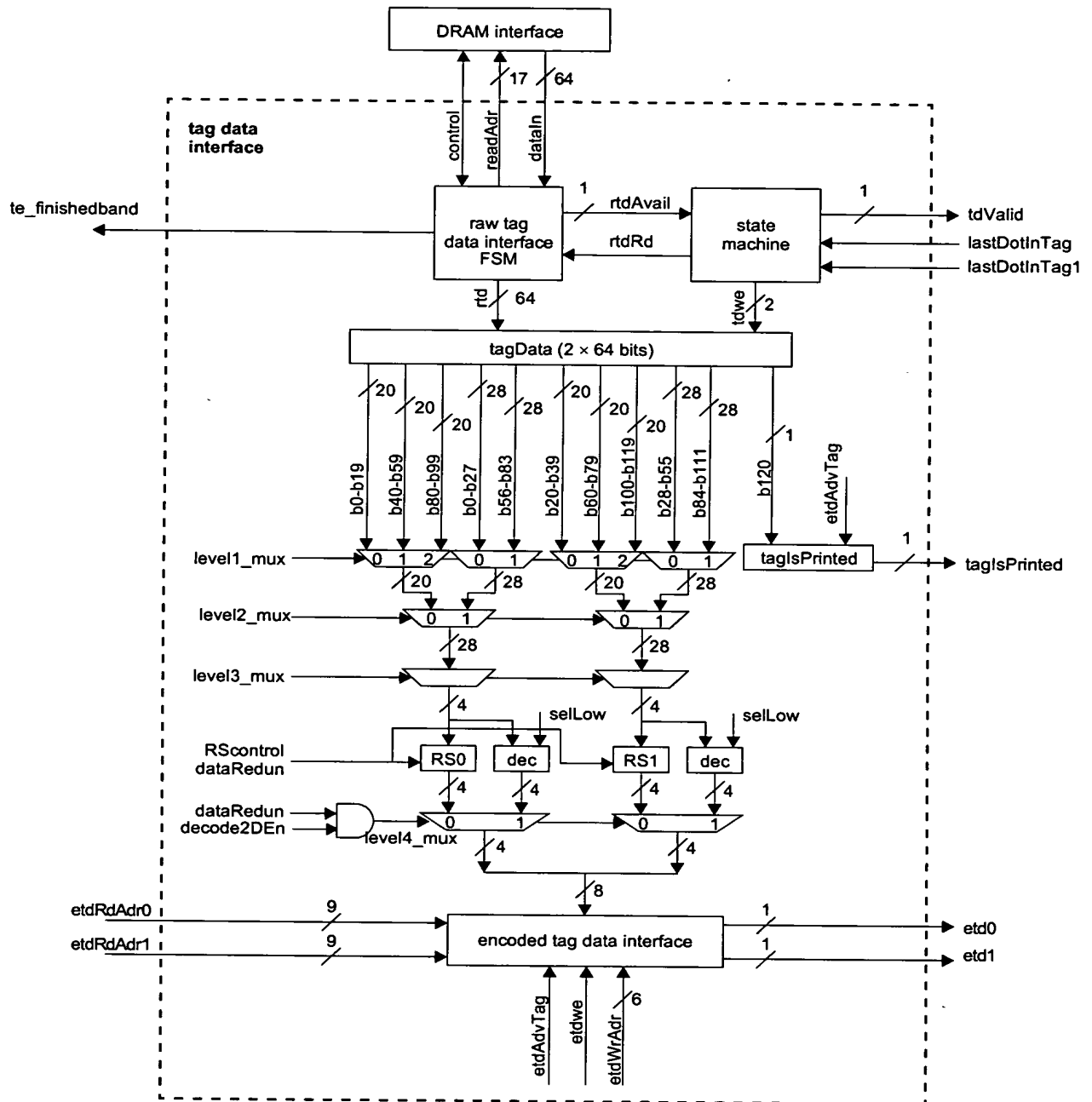


FIG. 197

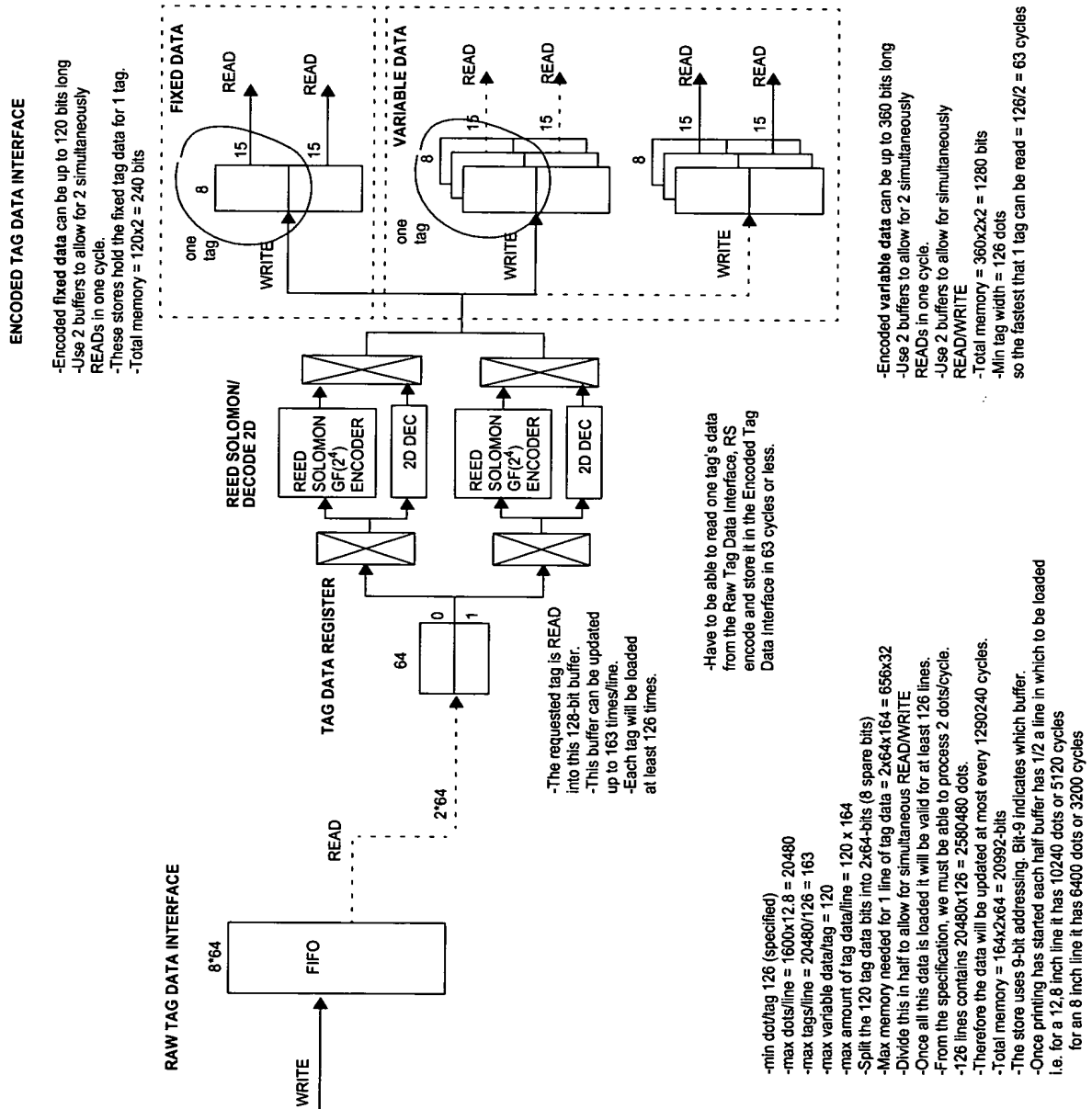


FIG. 198



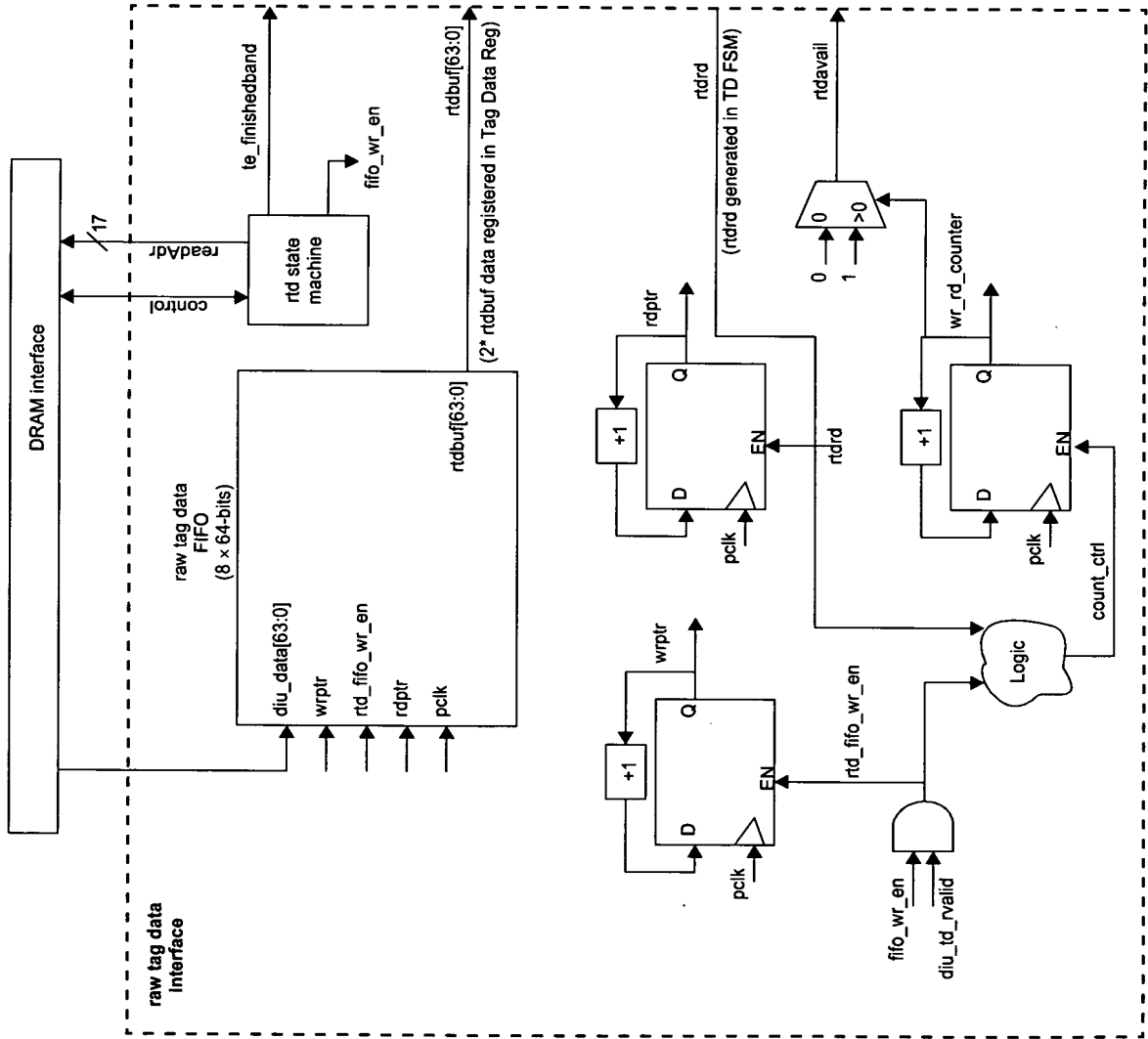


FIG. 199

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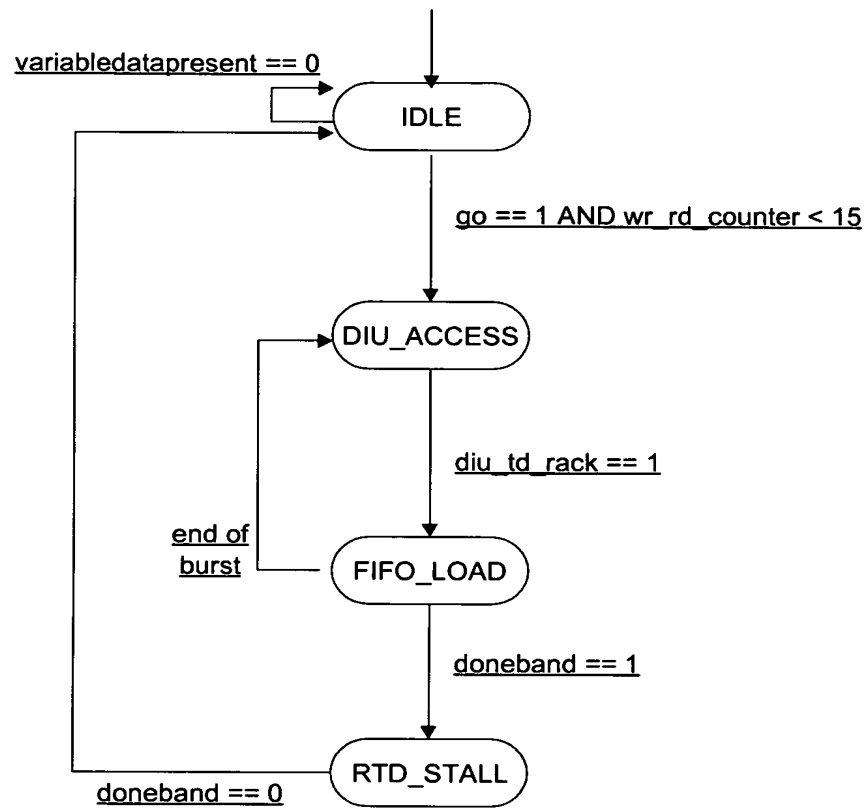


FIG. 200

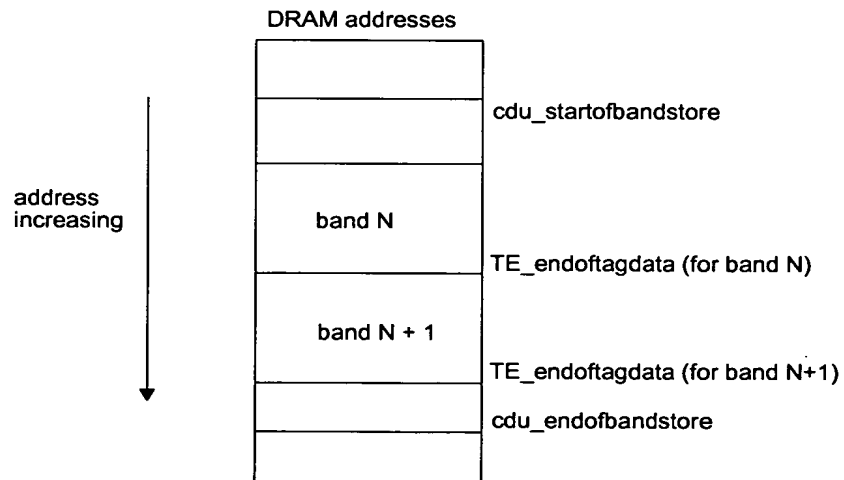


FIG. 201

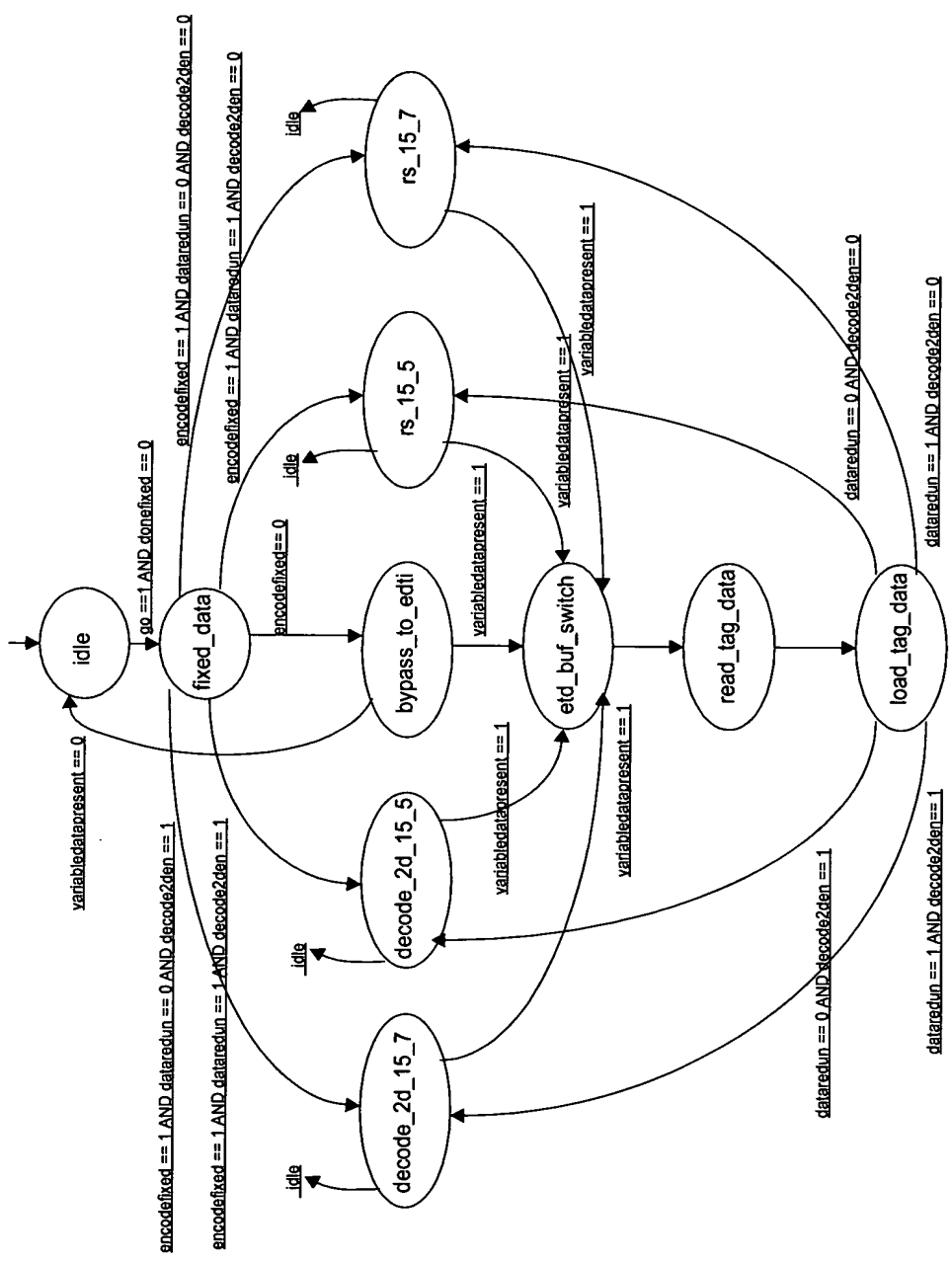


FIG. 202

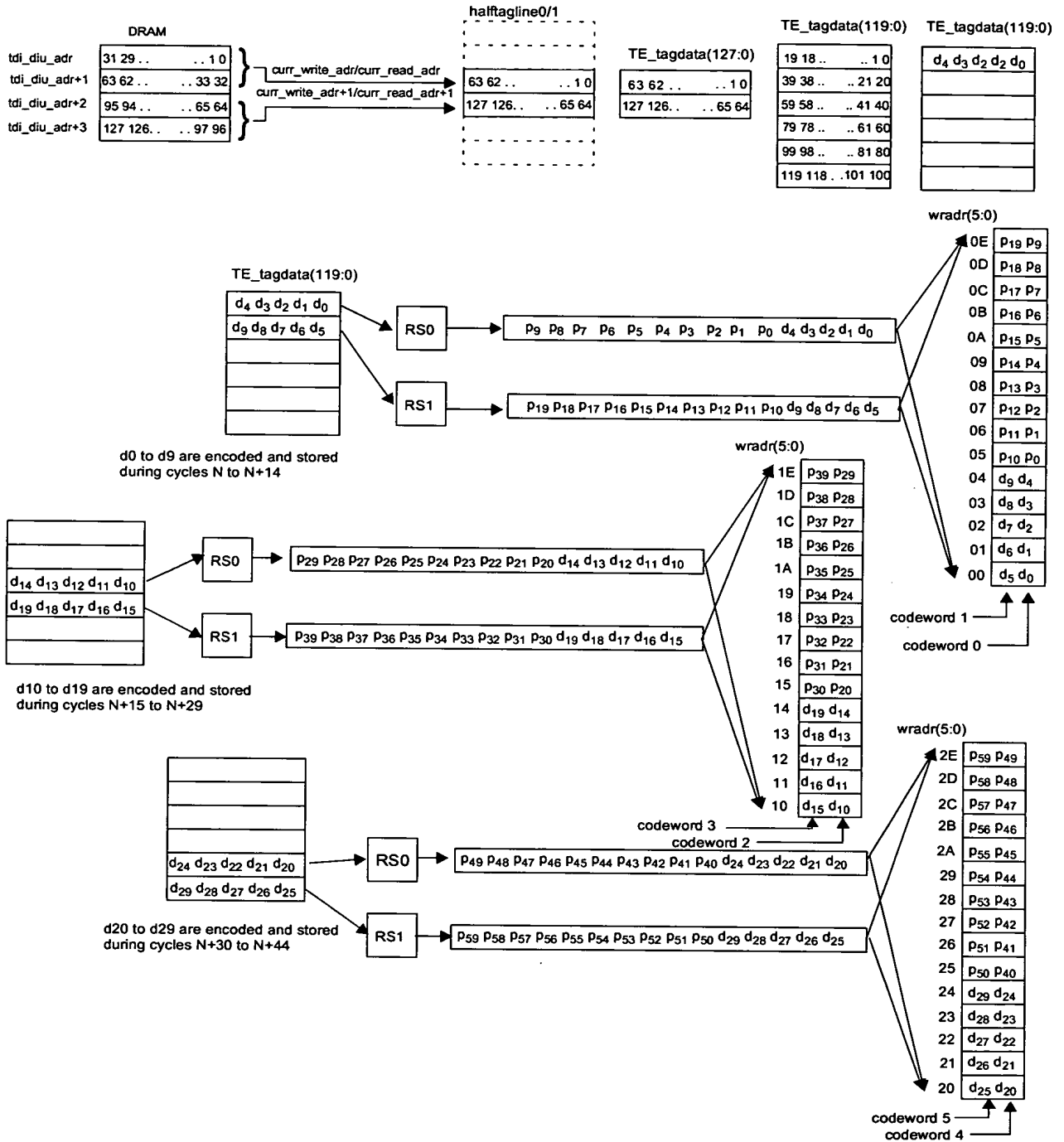


FIG. 203

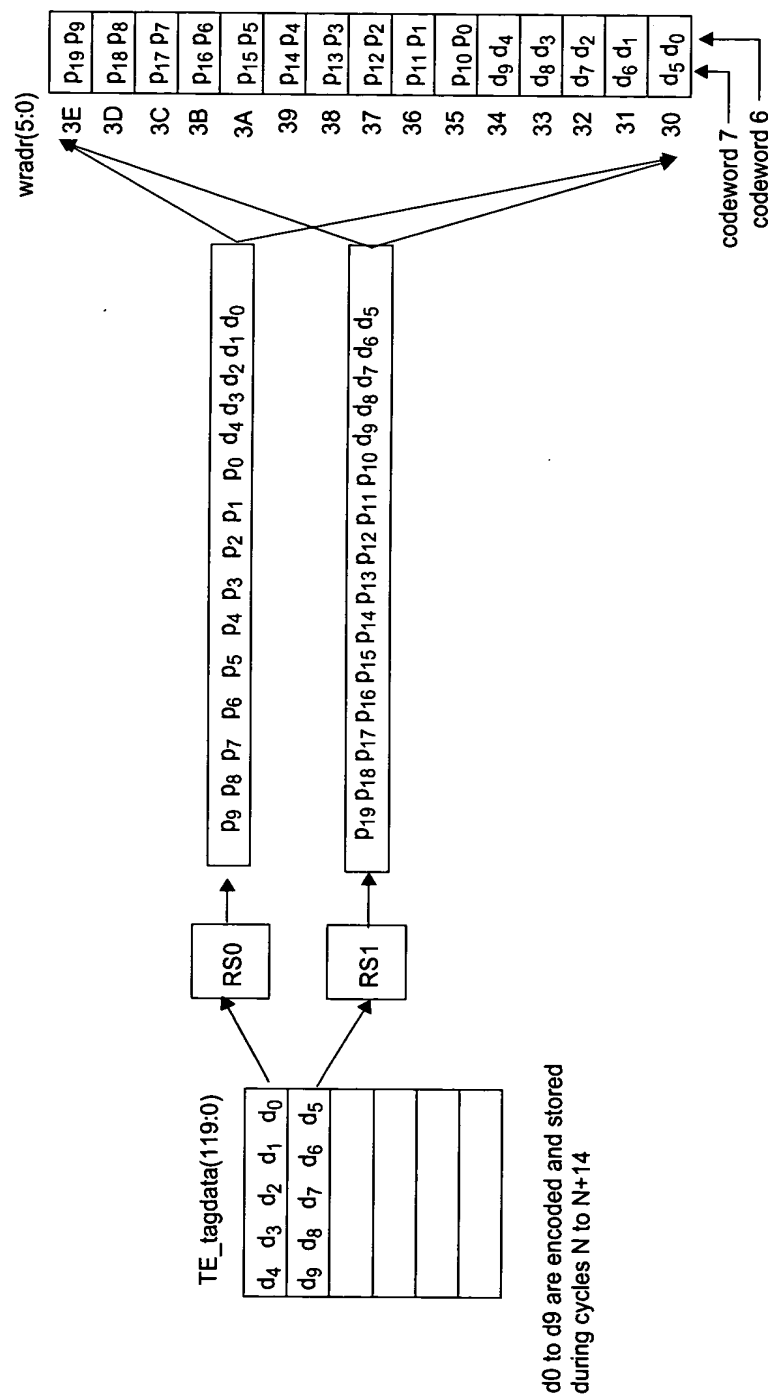


FIG. 204

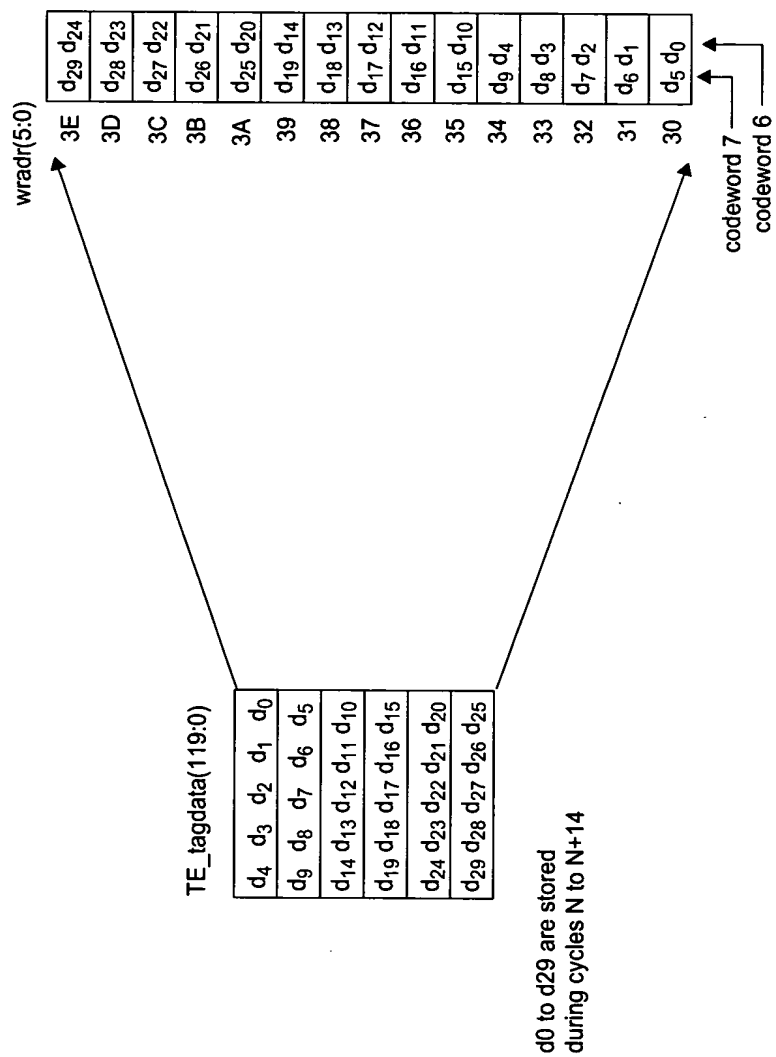


FIG. 205

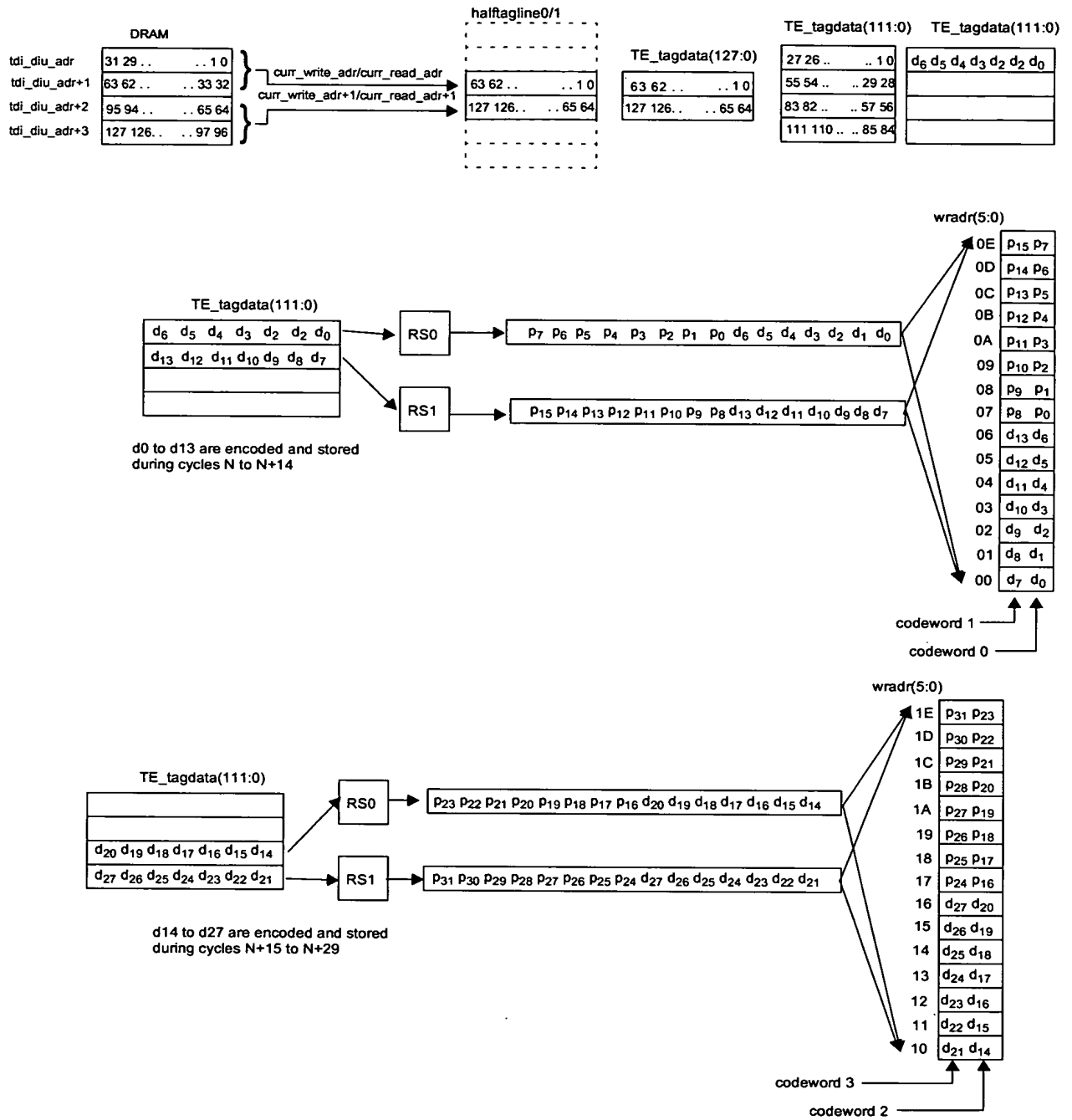


FIG. 206

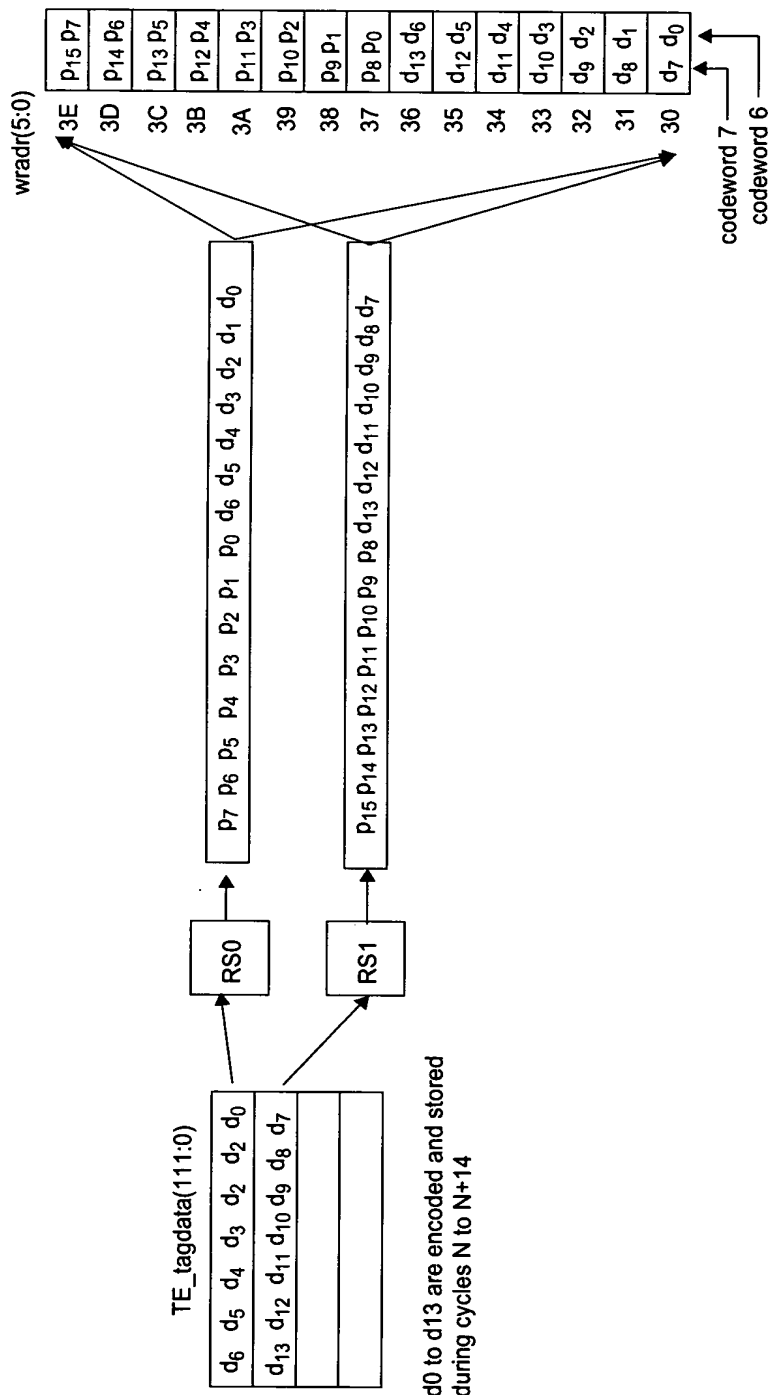


FIG. 207



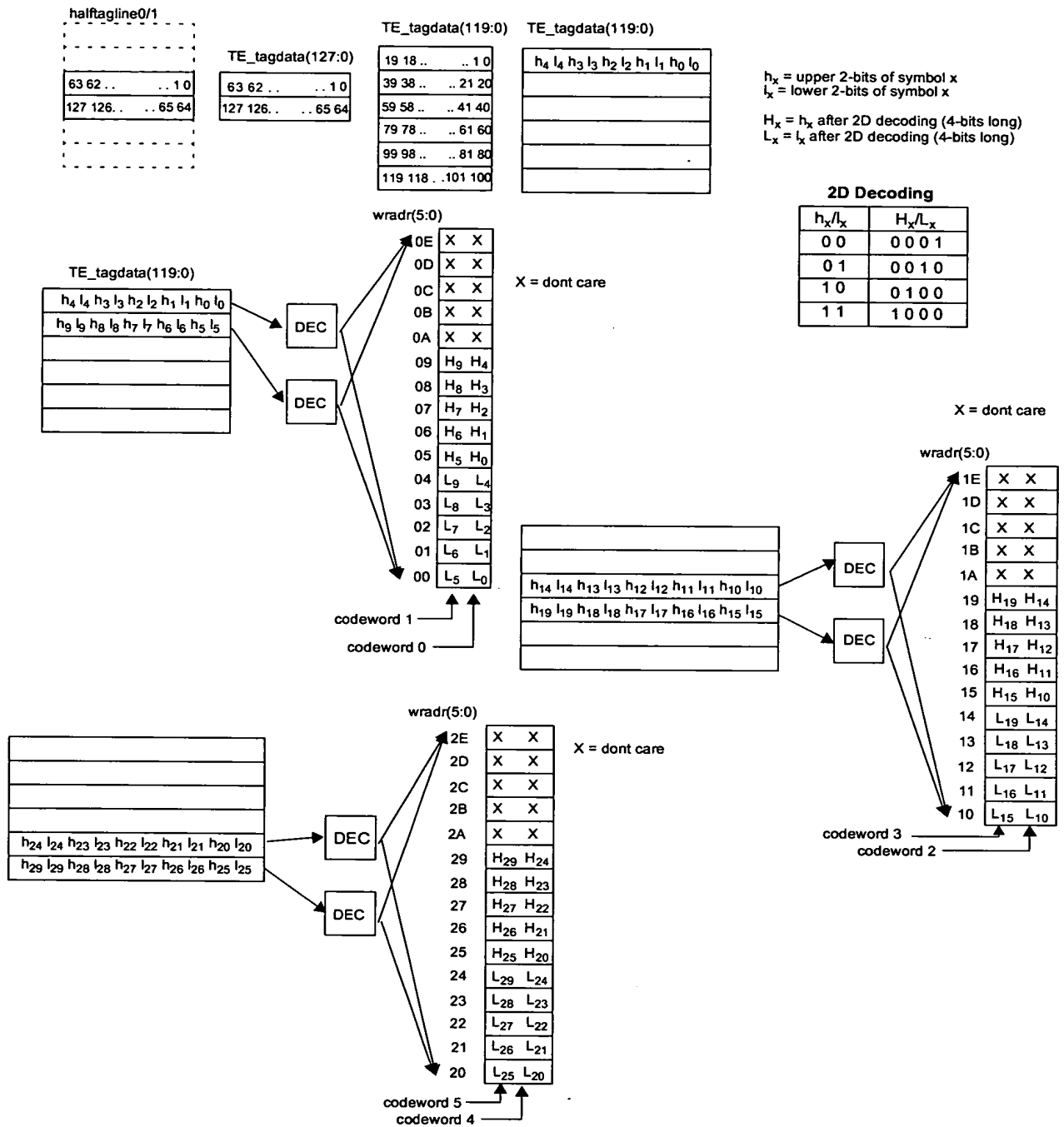


FIG. 208

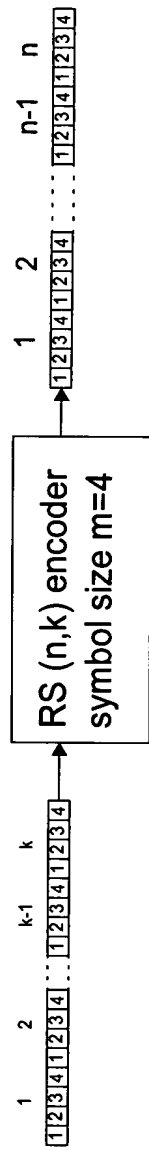


FIG. 209

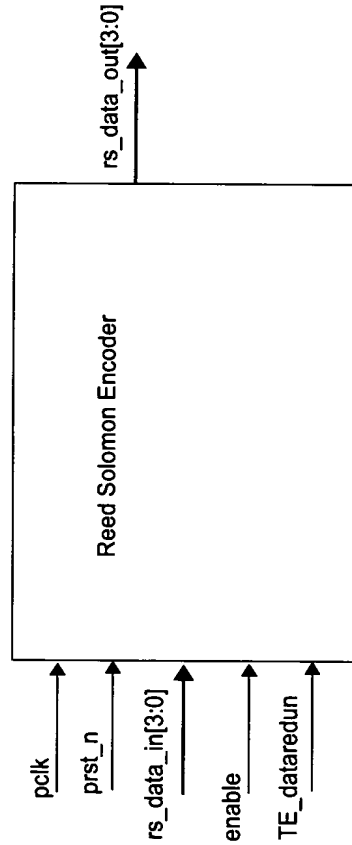


FIG. 210

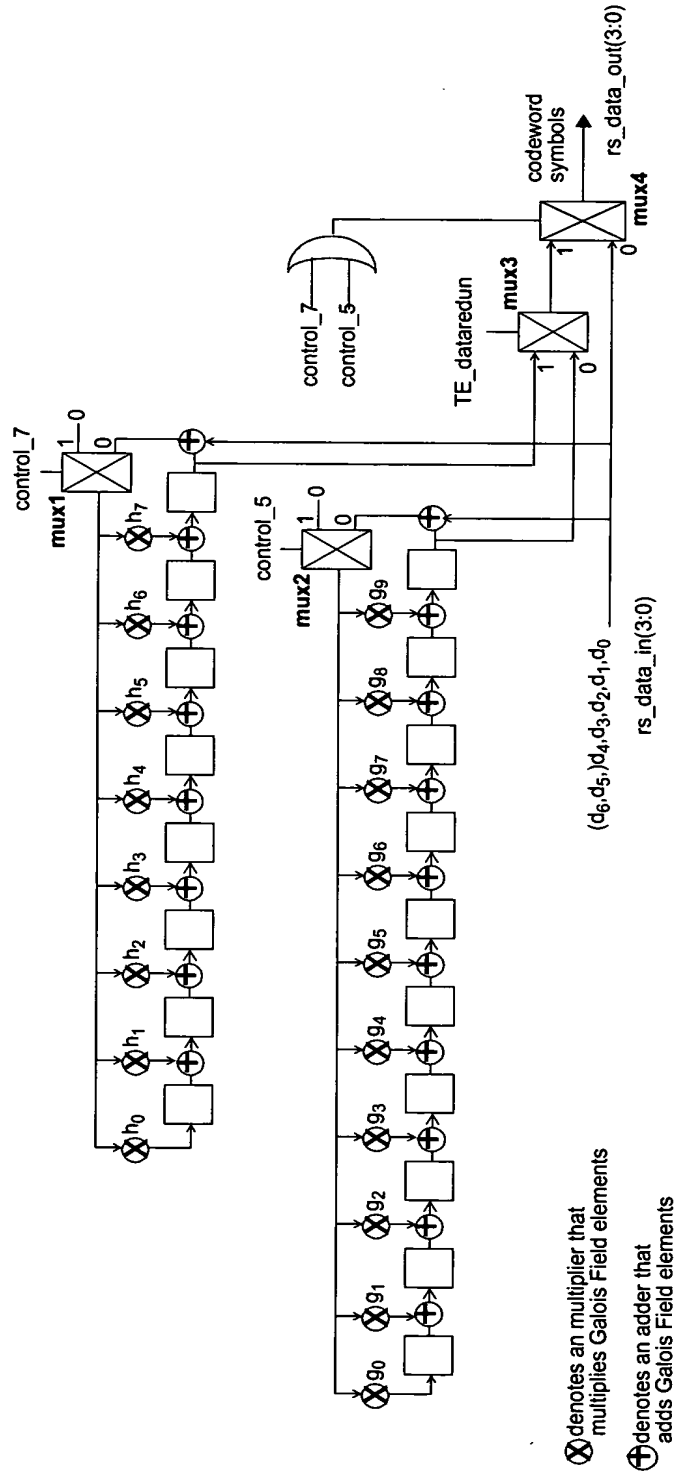


FIG. 211

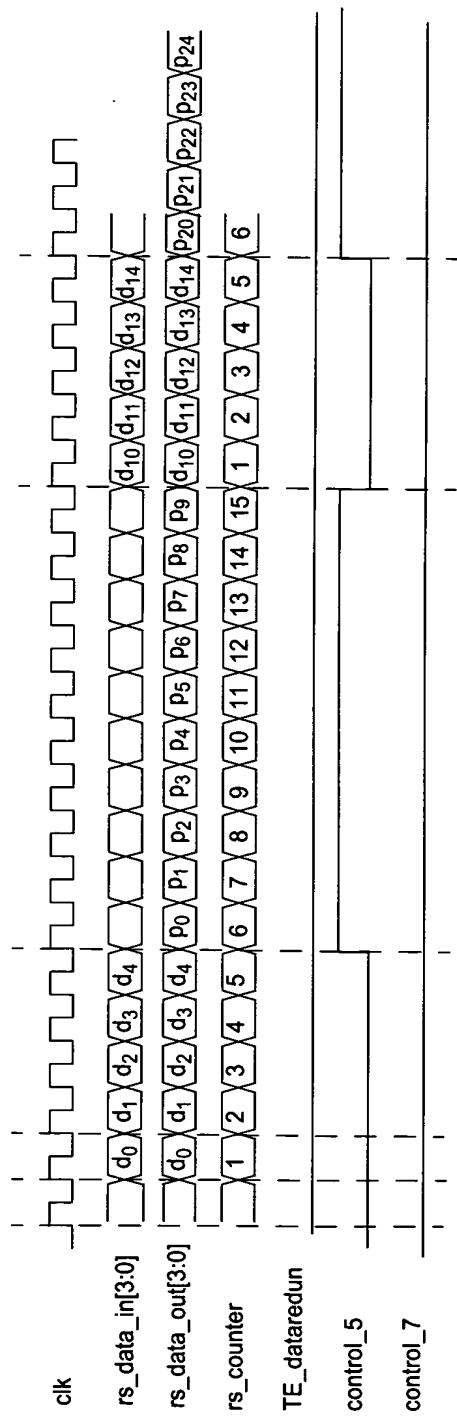


FIG. 212

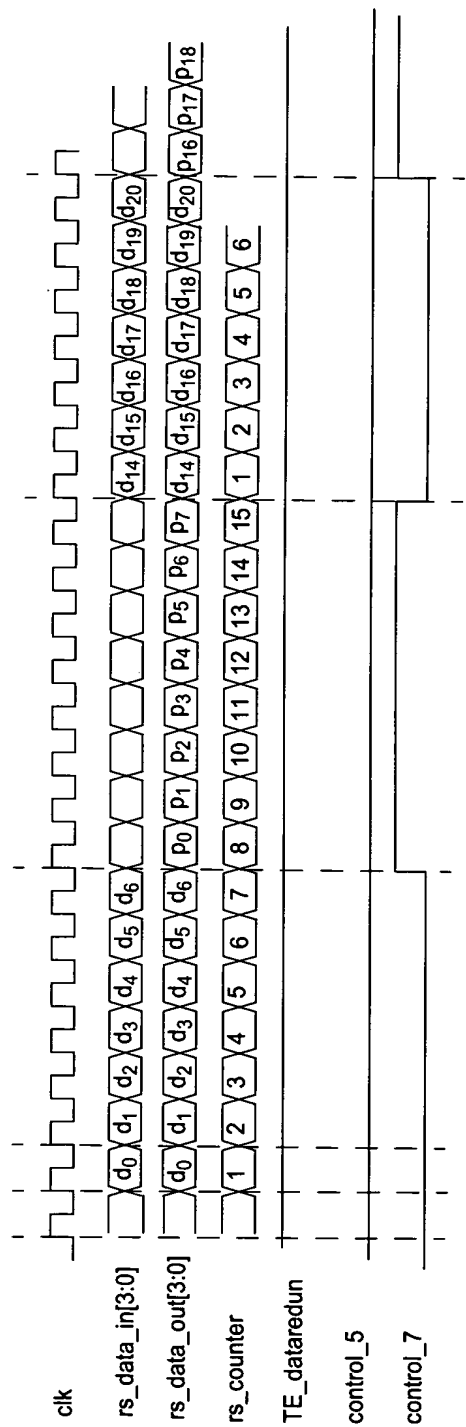


FIG. 213

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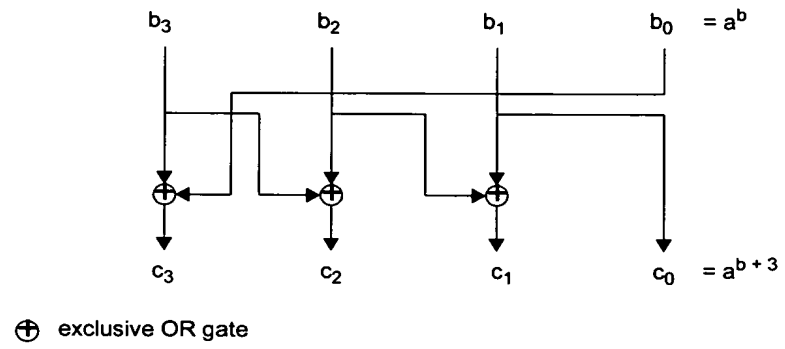


FIG. 214

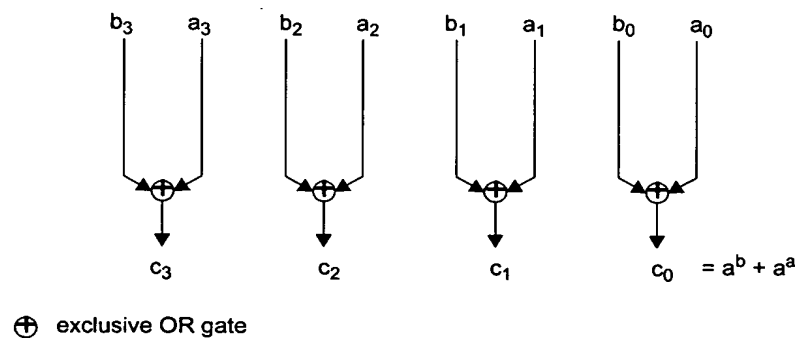


FIG. 215

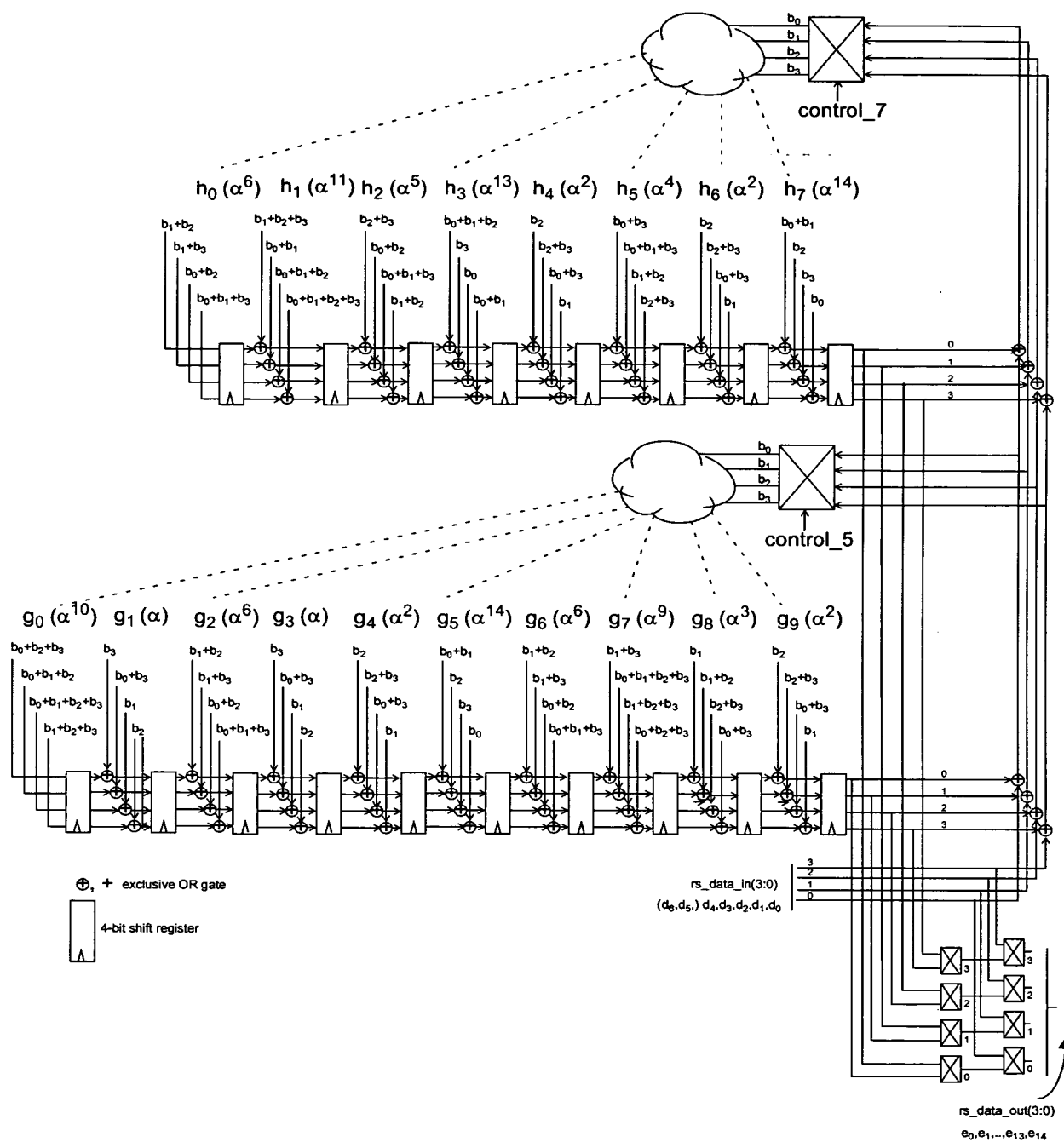


FIG. 216

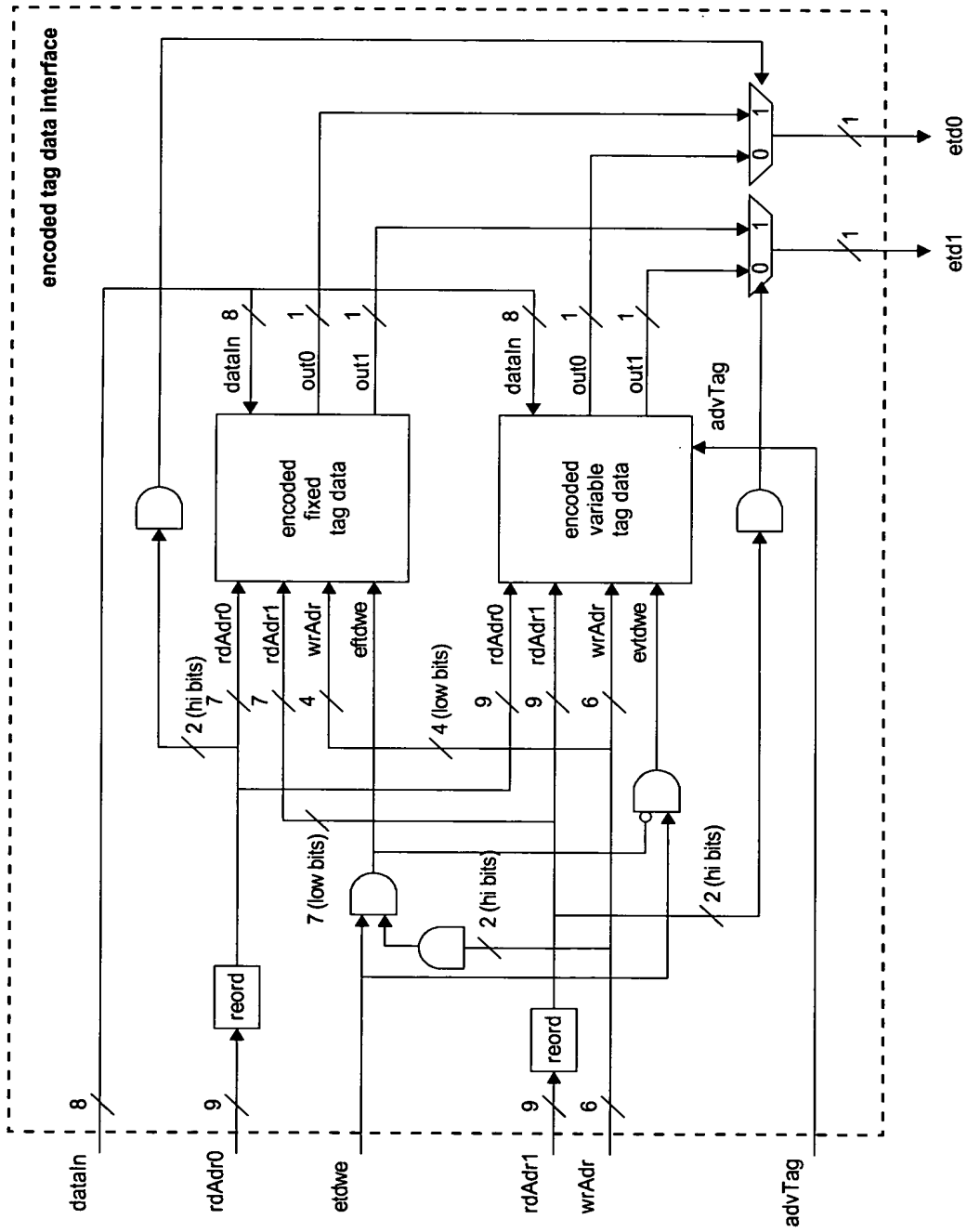


FIG. 217



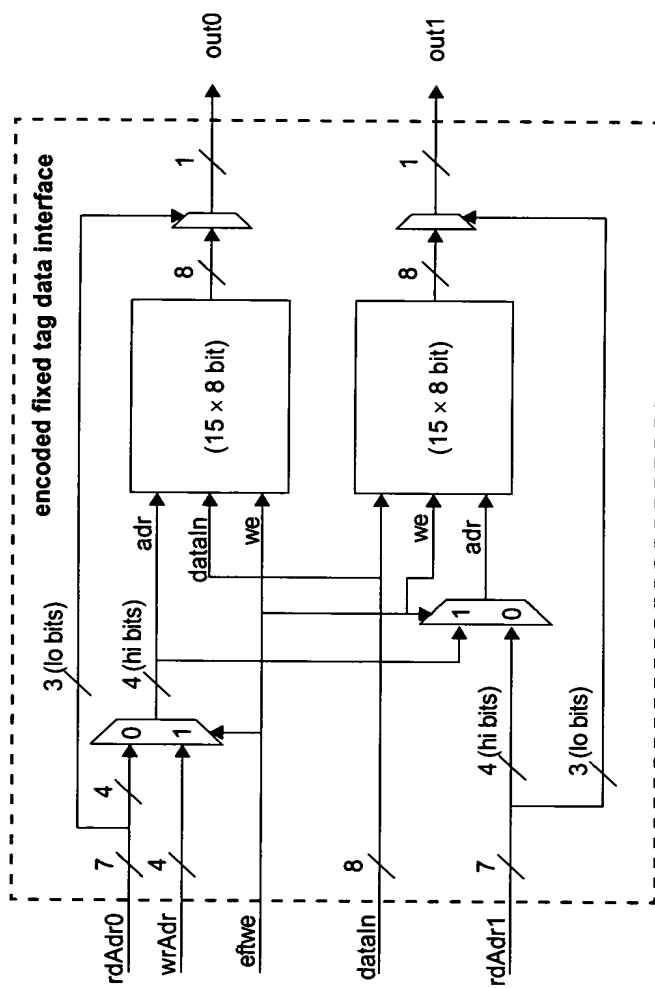


FIG. 218

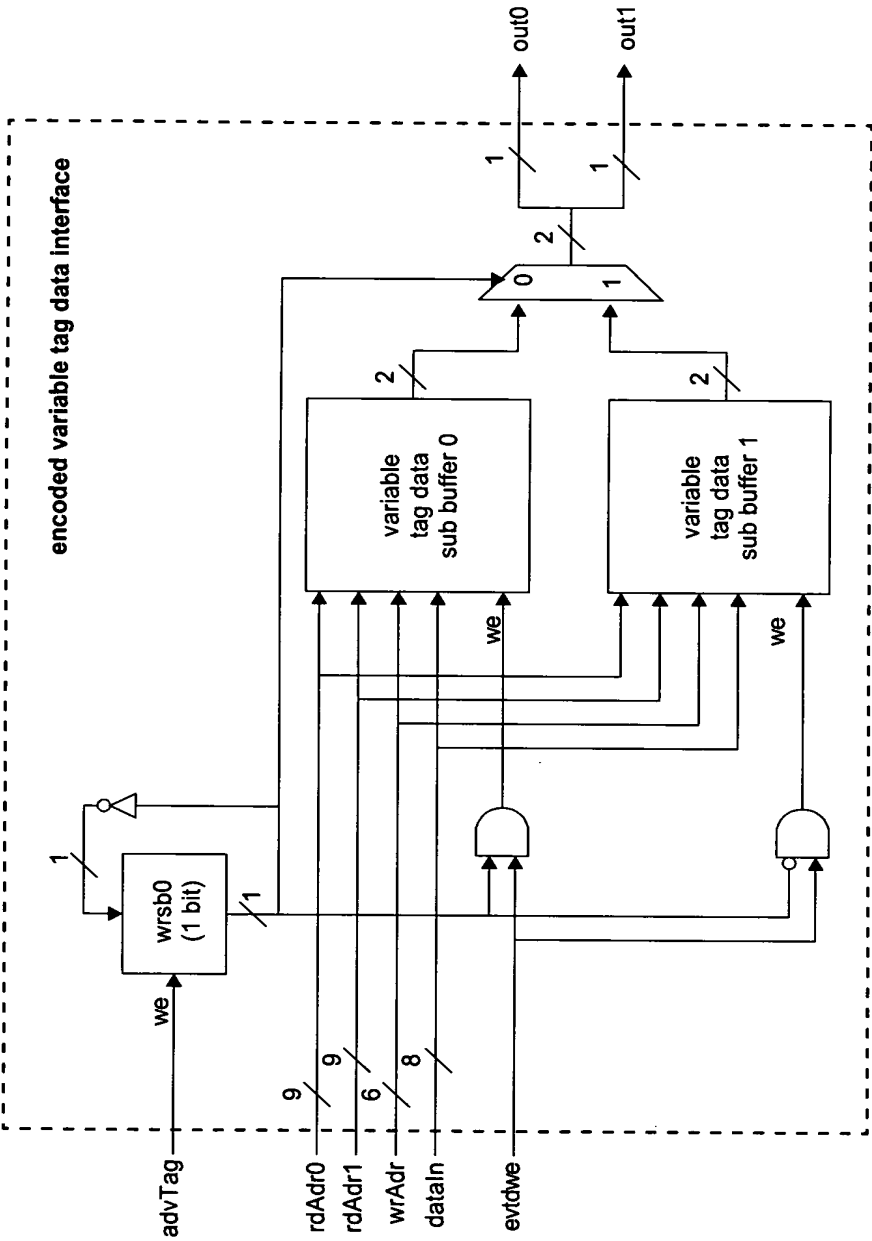


FIG. 219



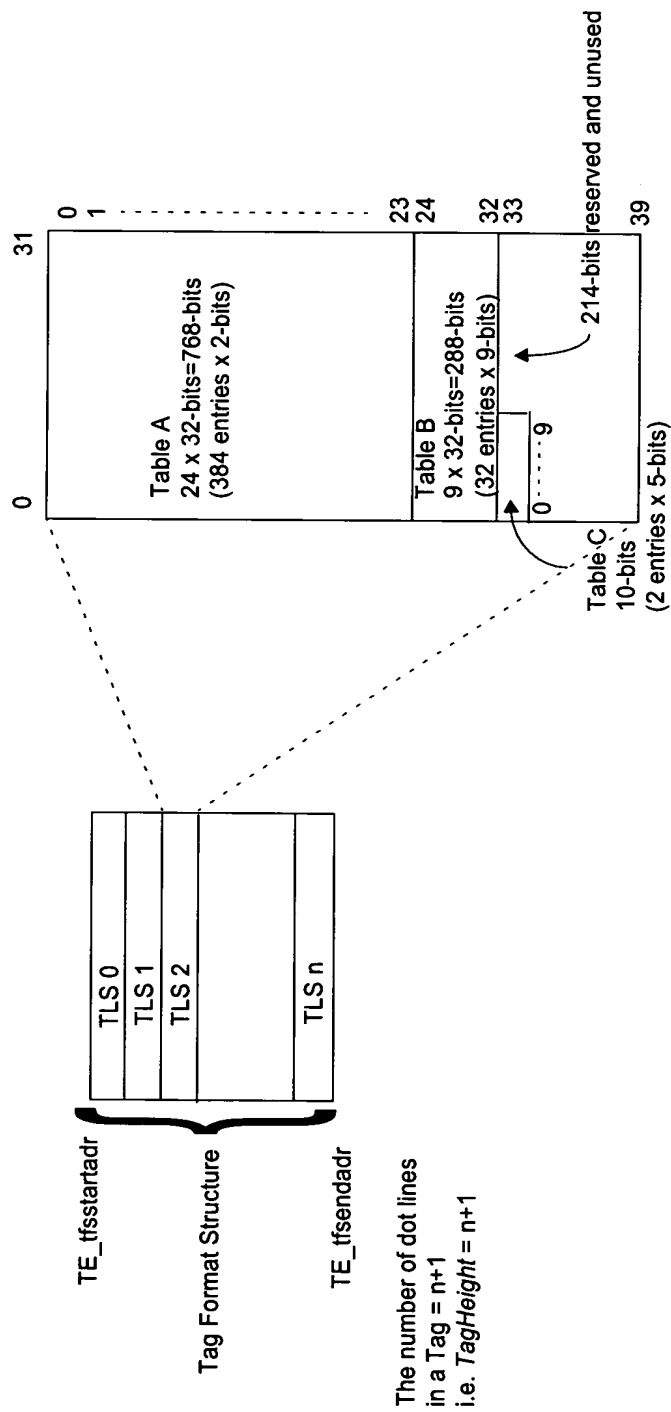


FIG. 221

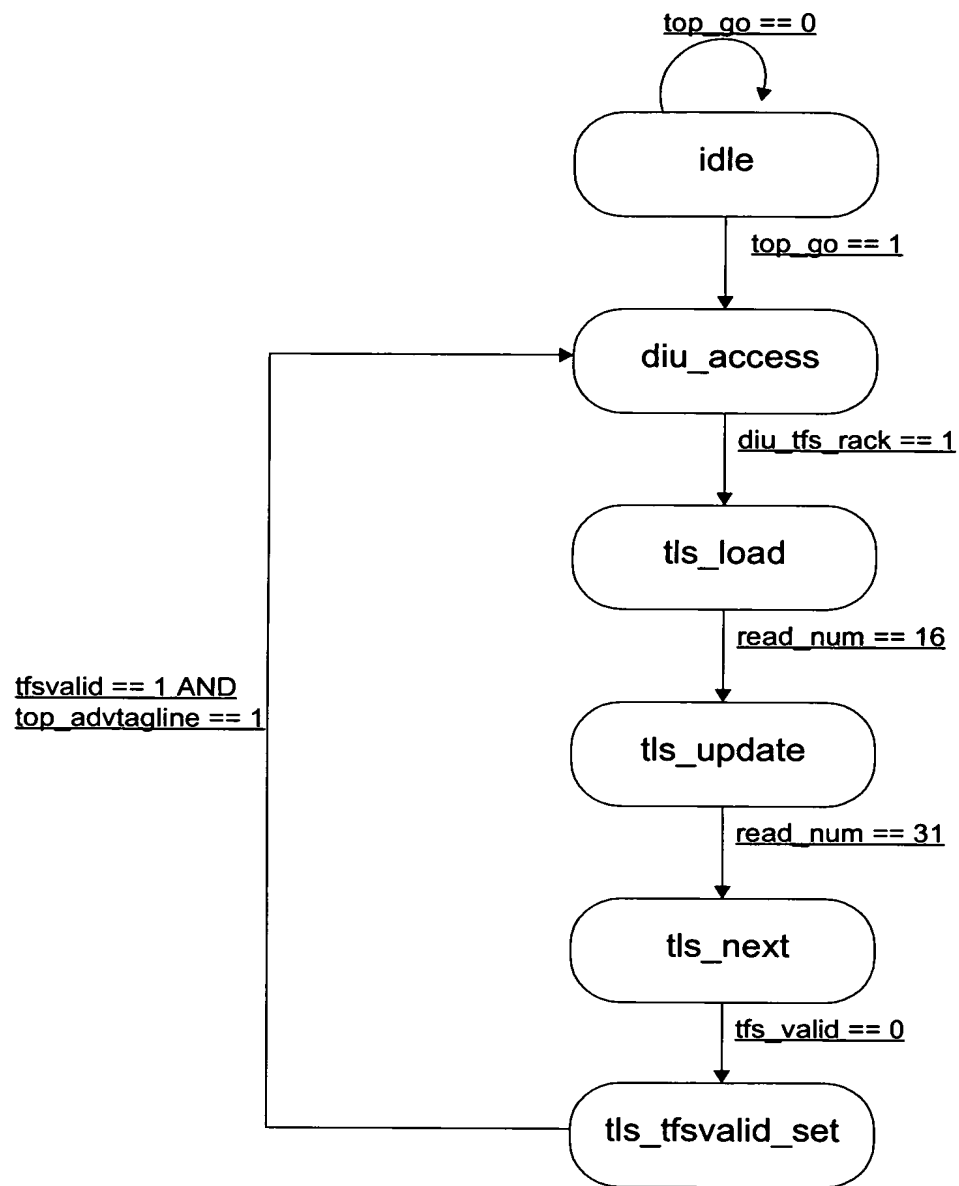


FIG. 222

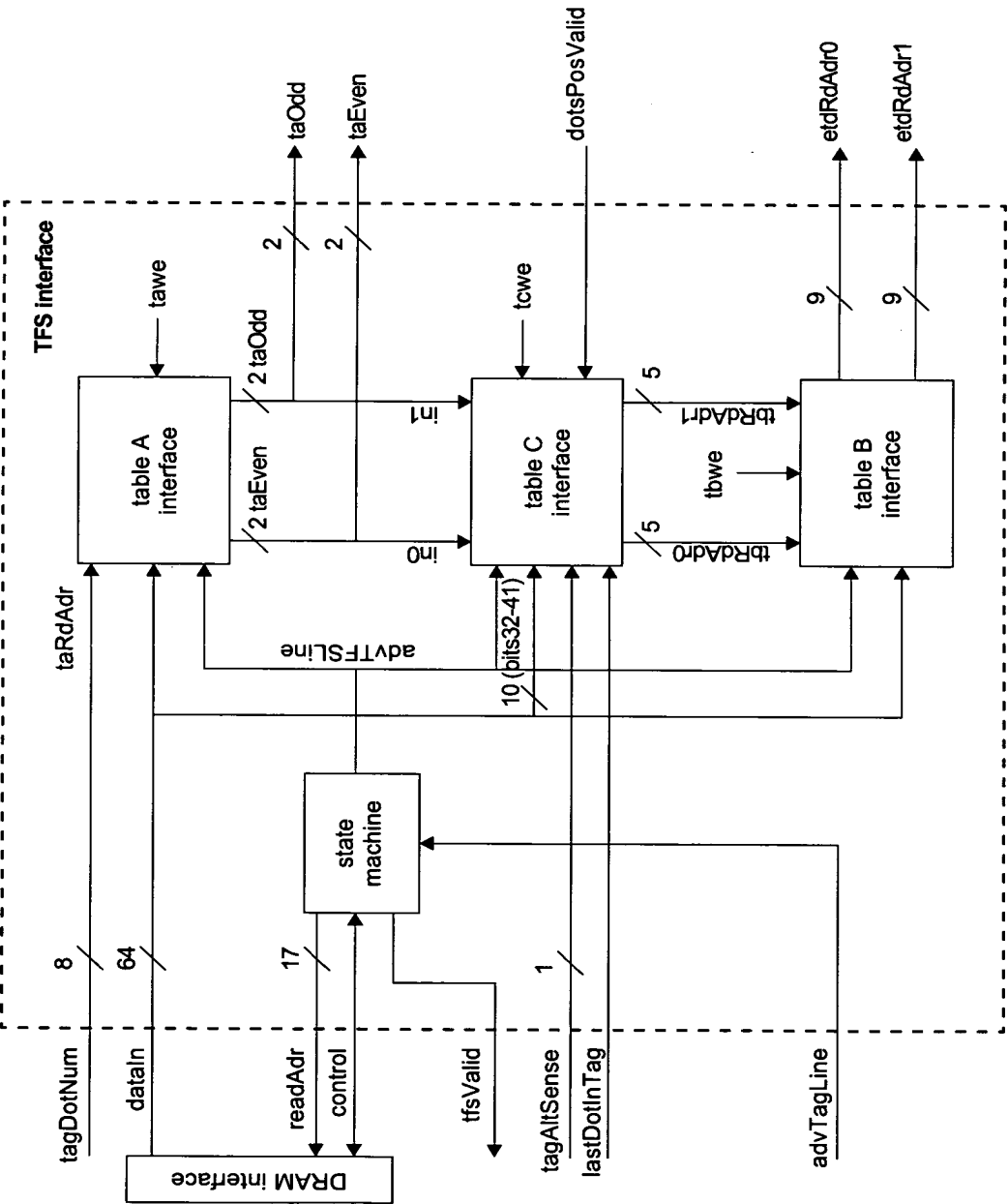


FIG. 223



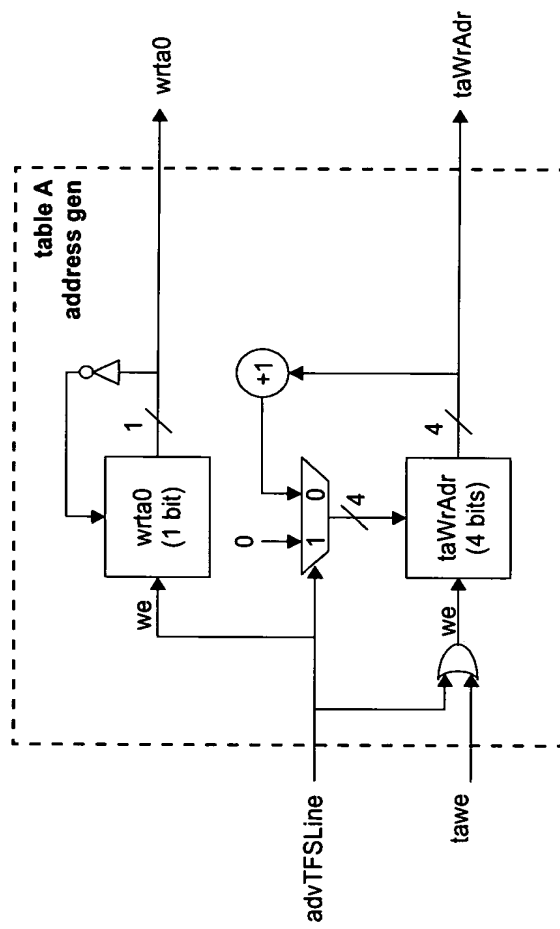


FIG. 225





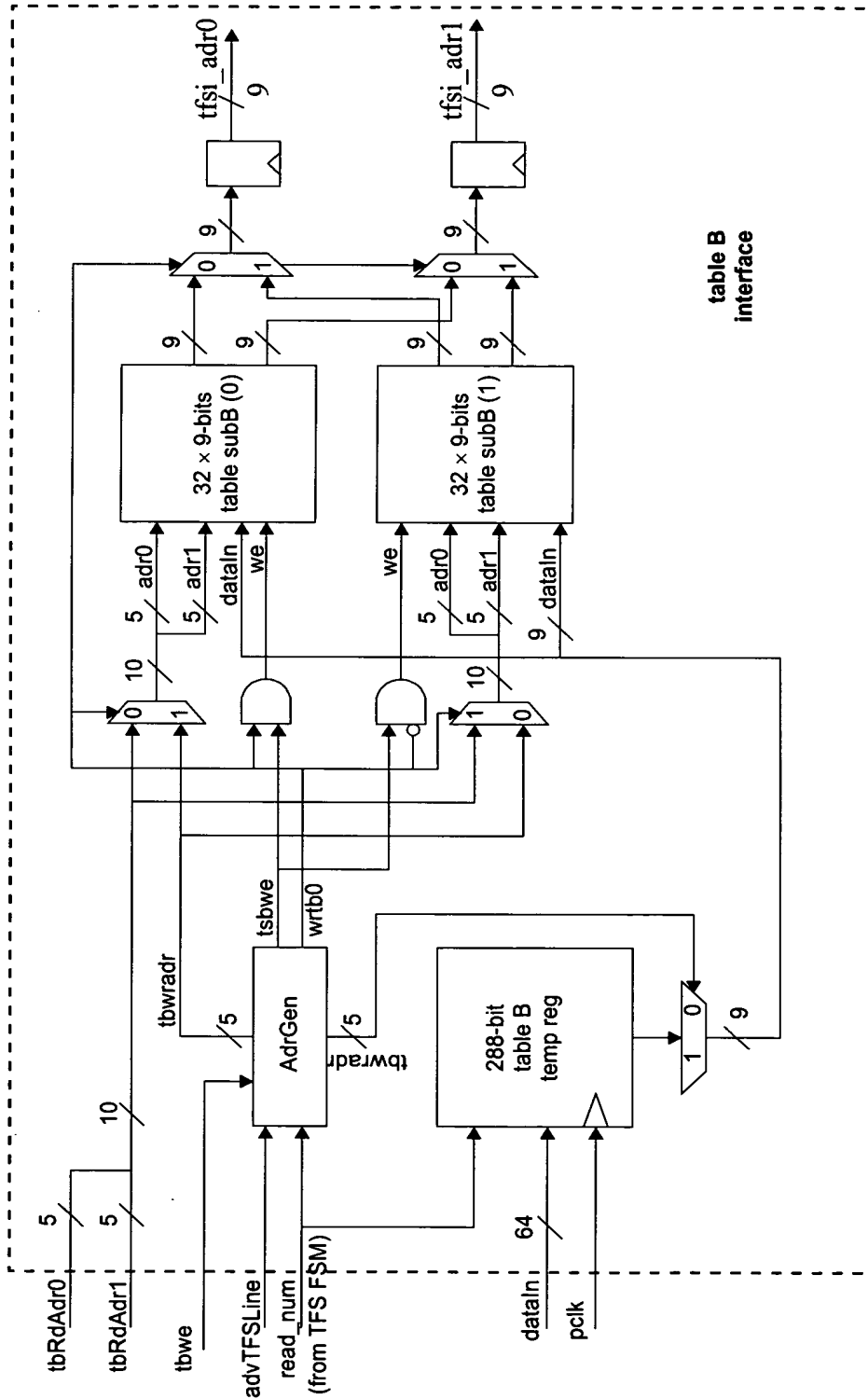


FIG. 227

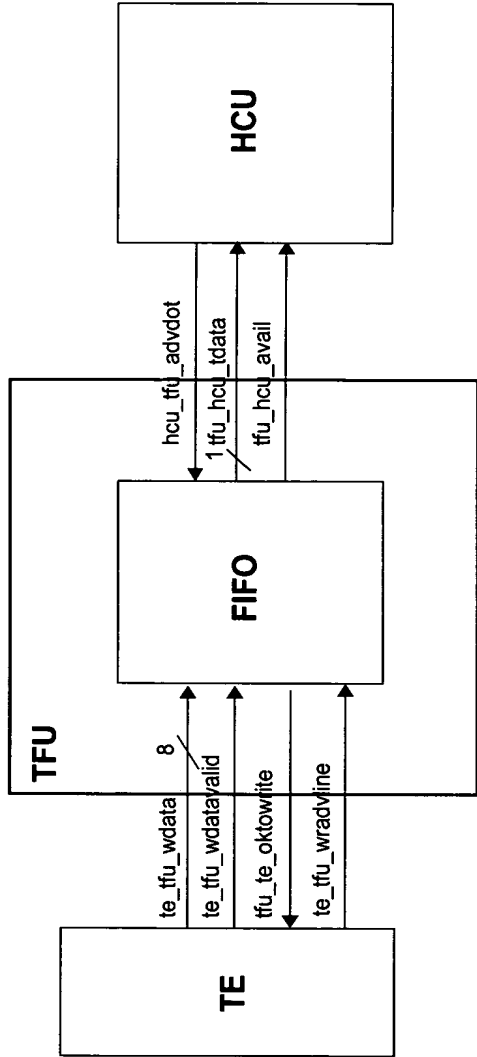


FIG. 228

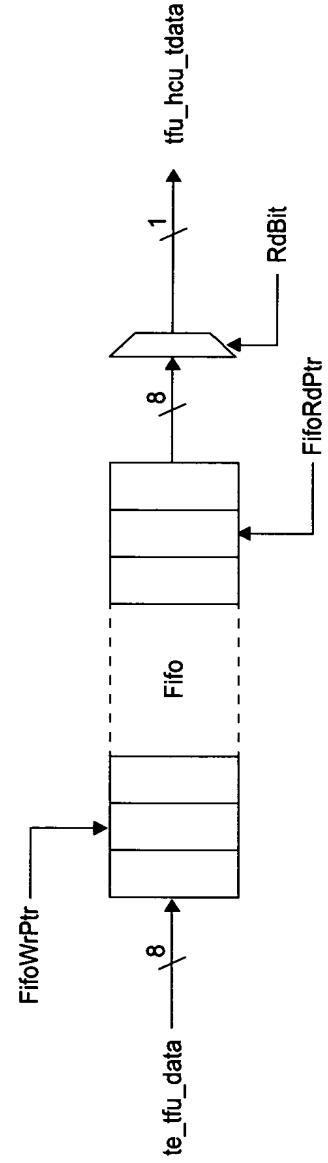


FIG. 229

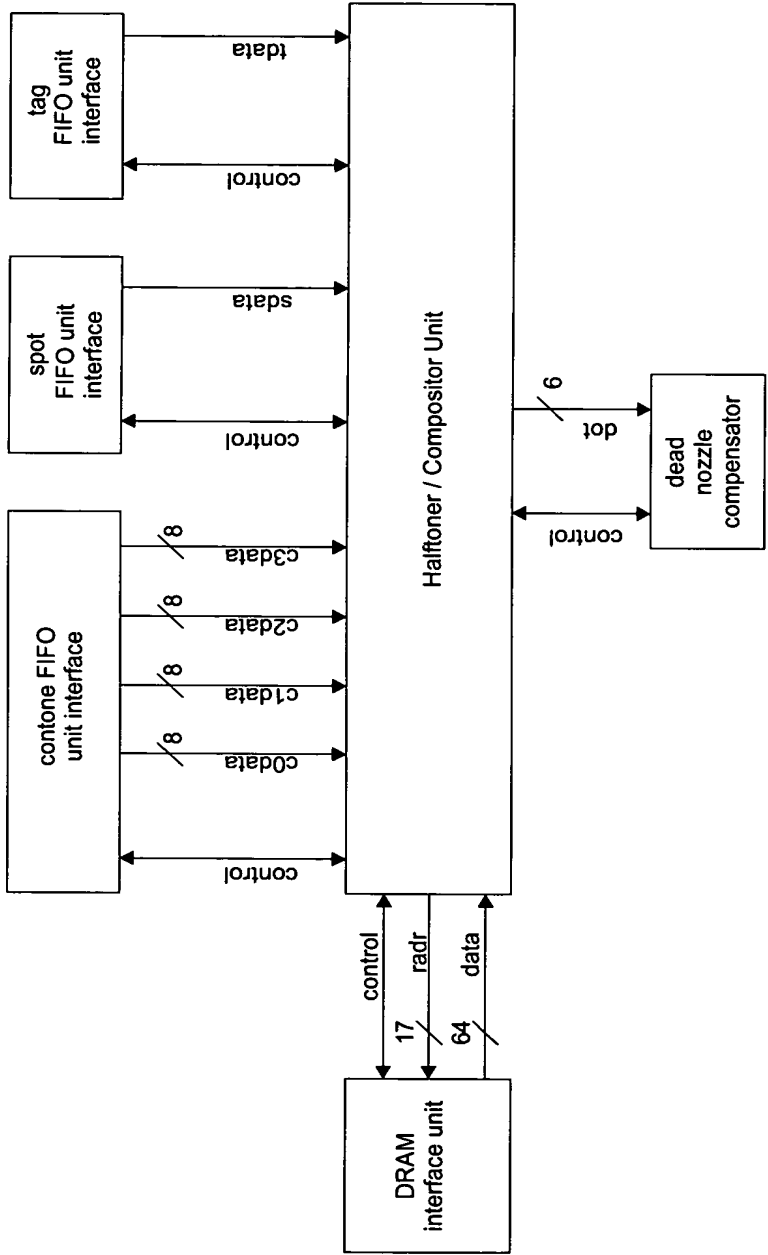


FIG. 230

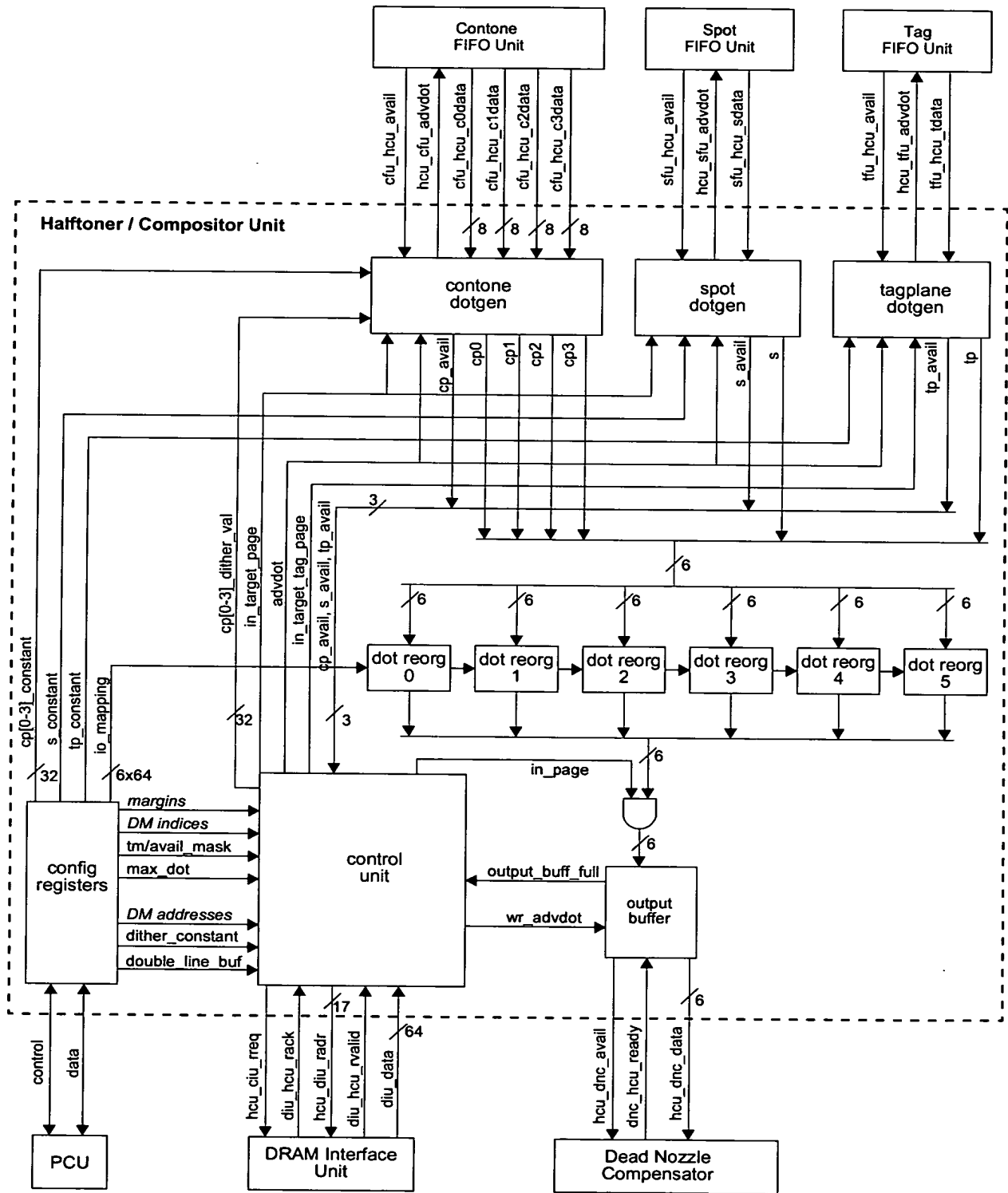


FIG. 231

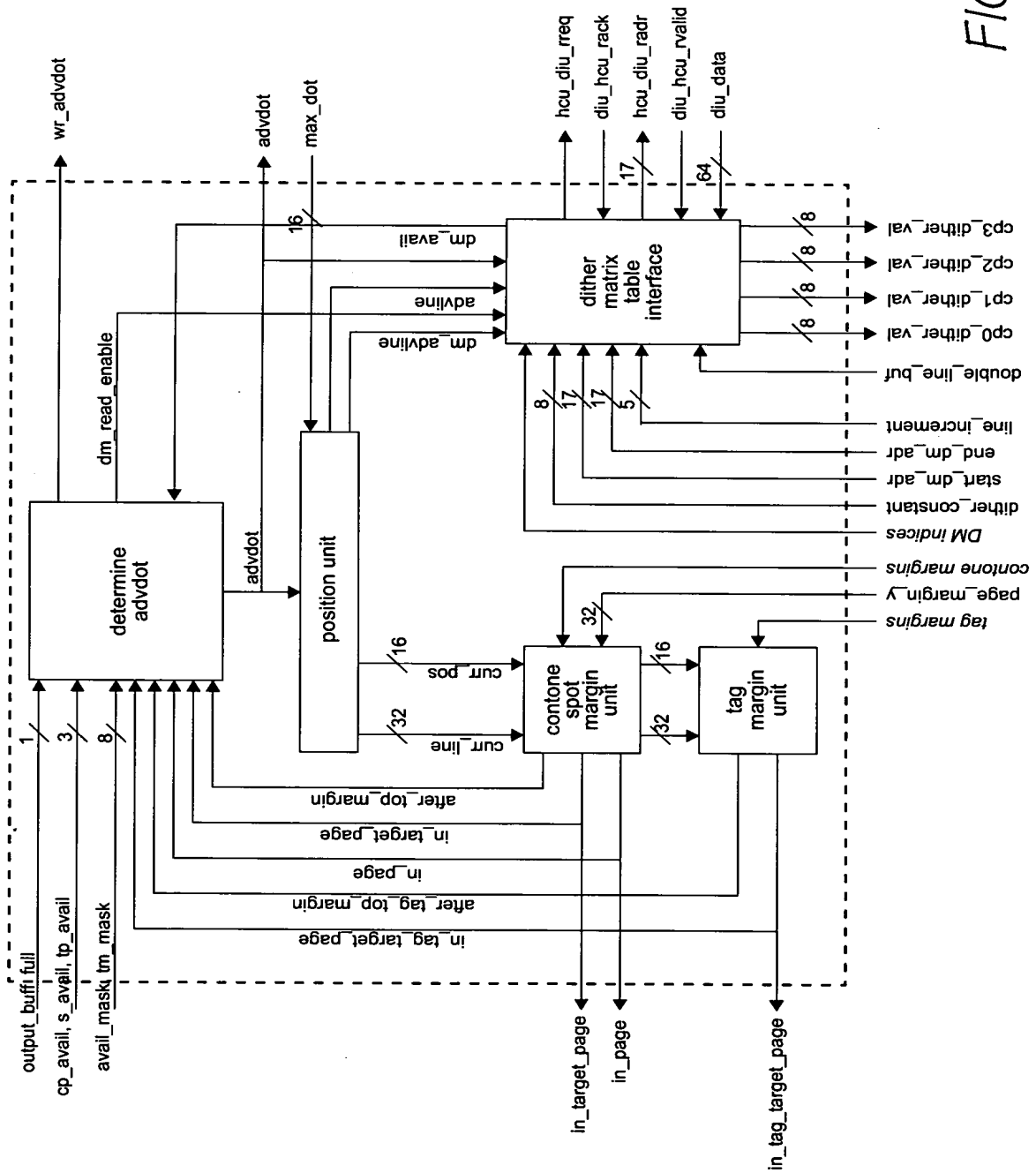


FIG. 232

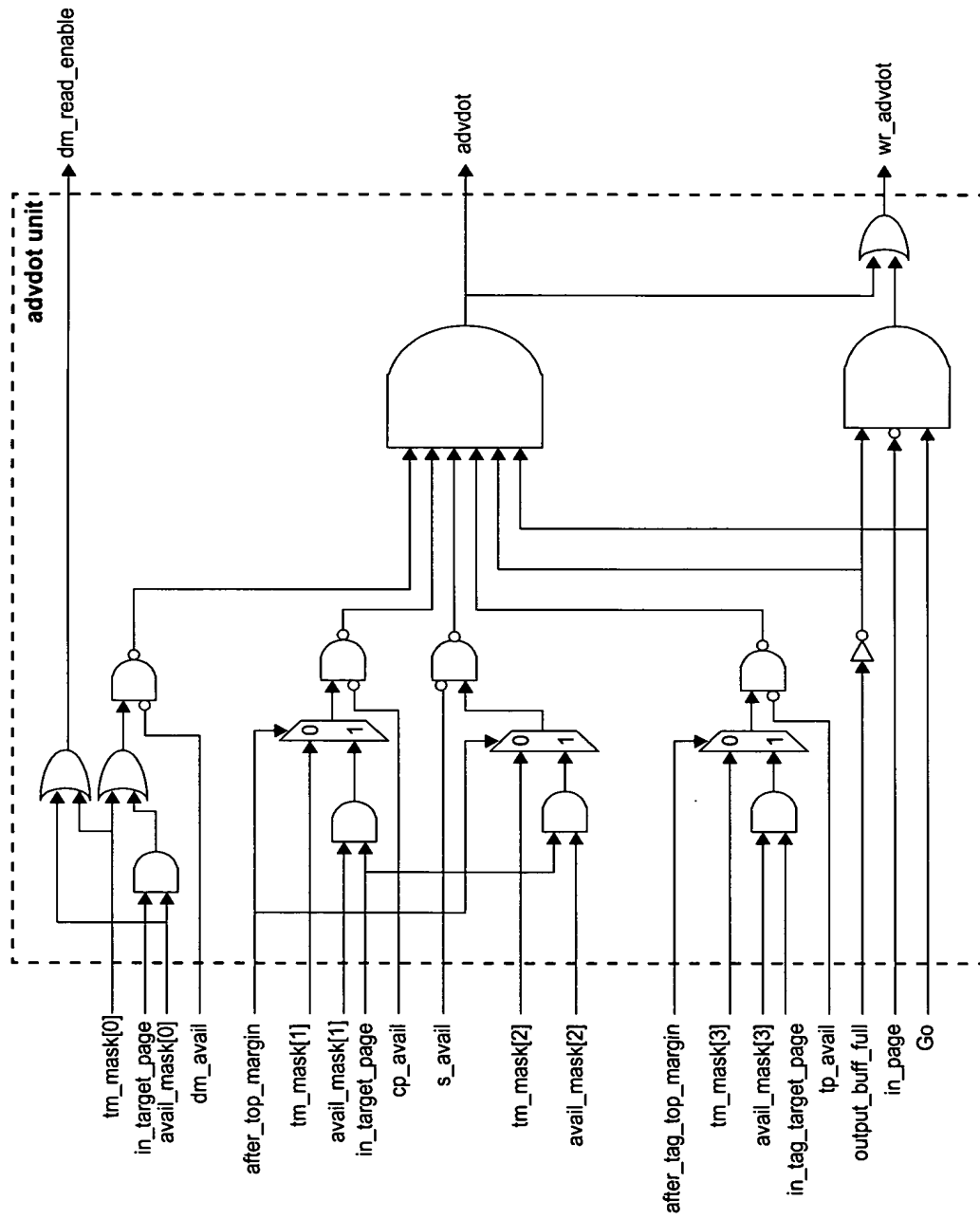
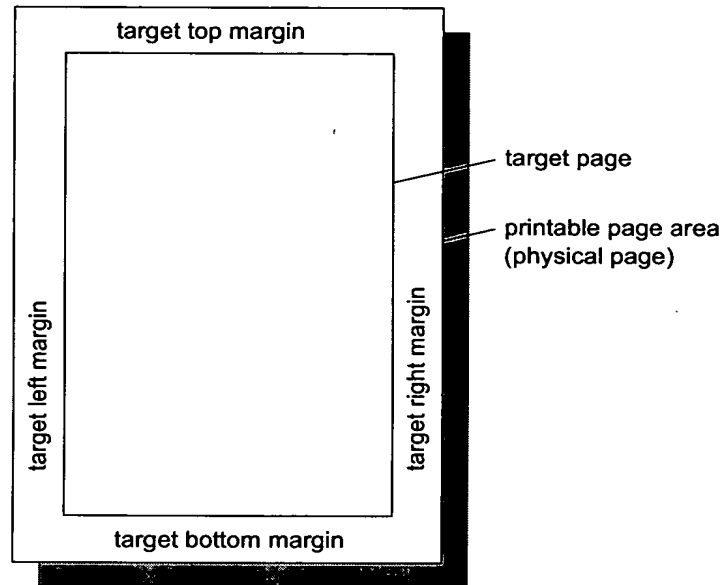


FIG. 233

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*FIG. 234*



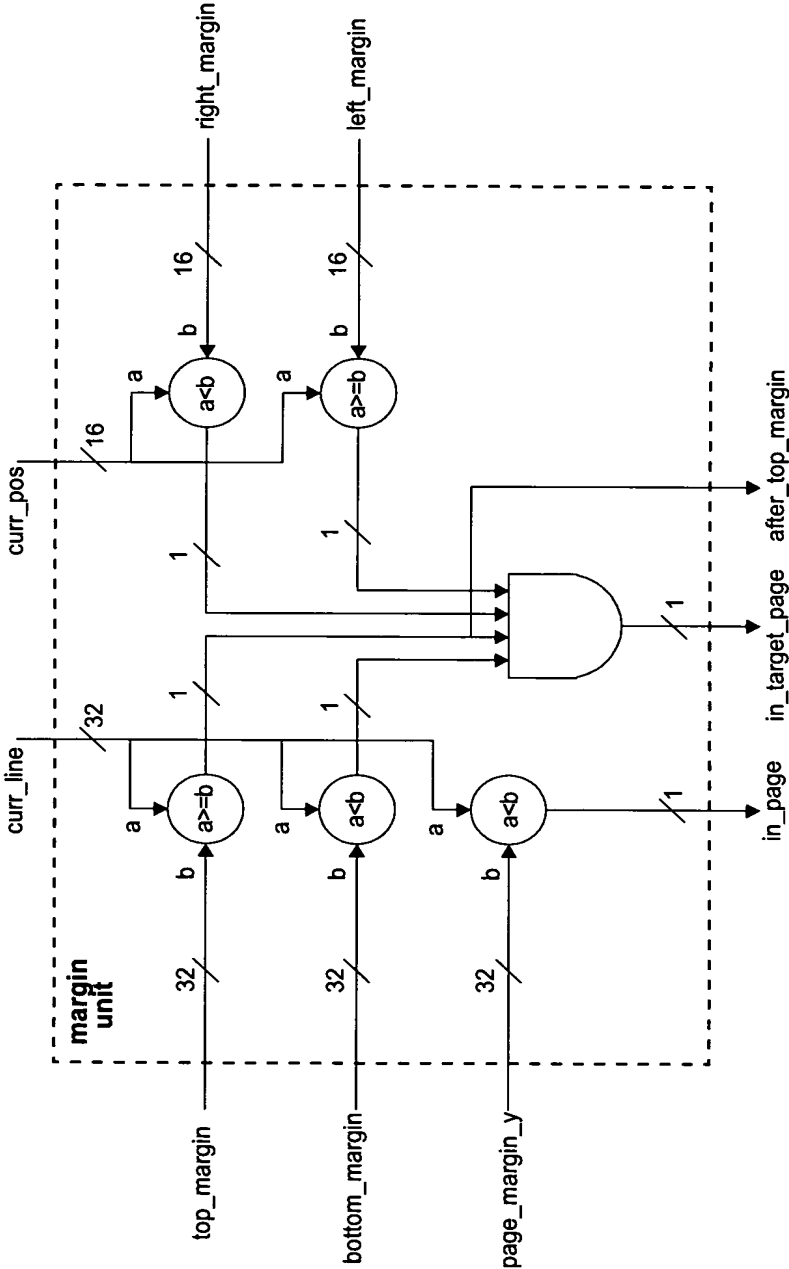


FIG. 235

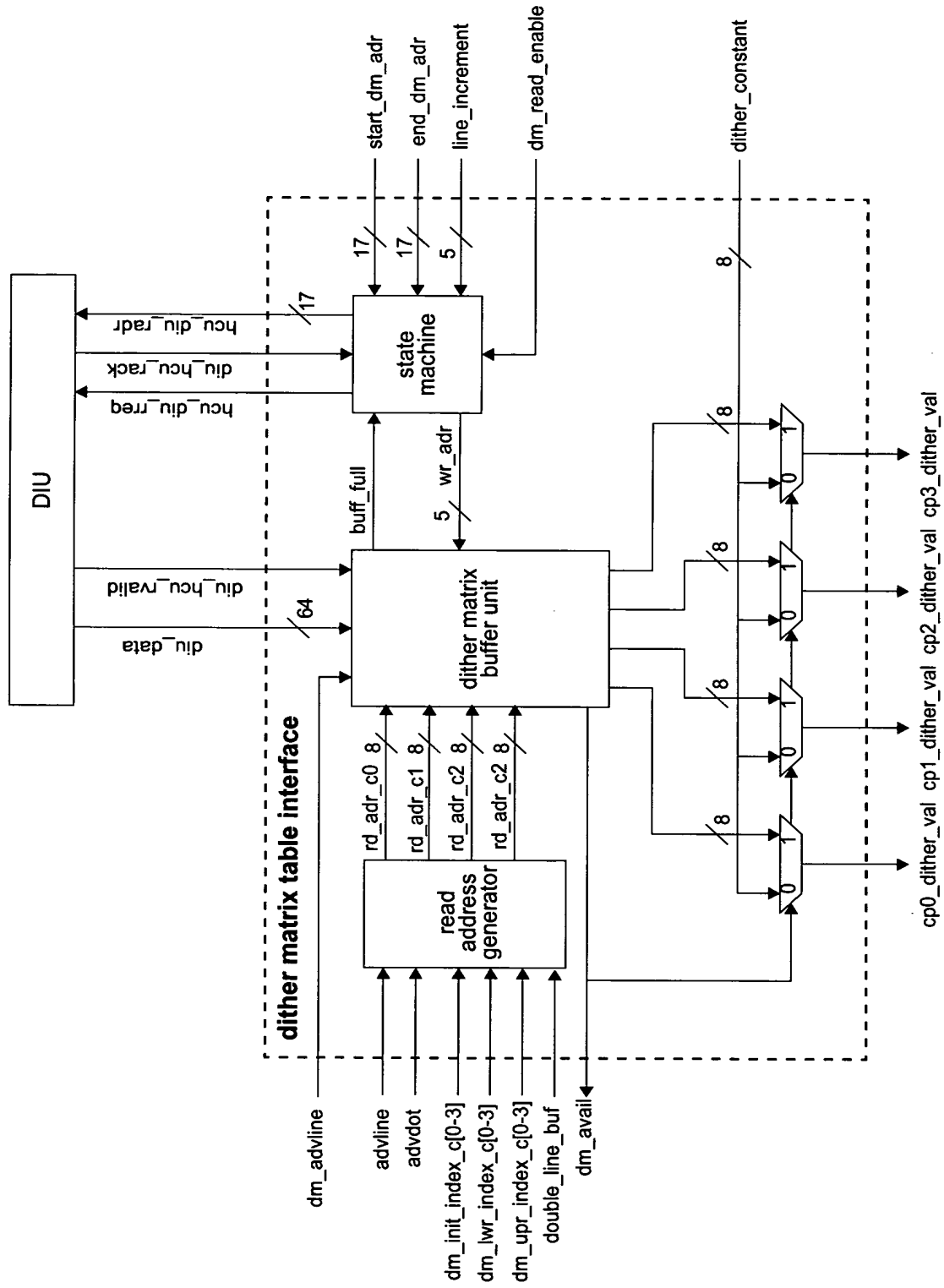


FIG. 236

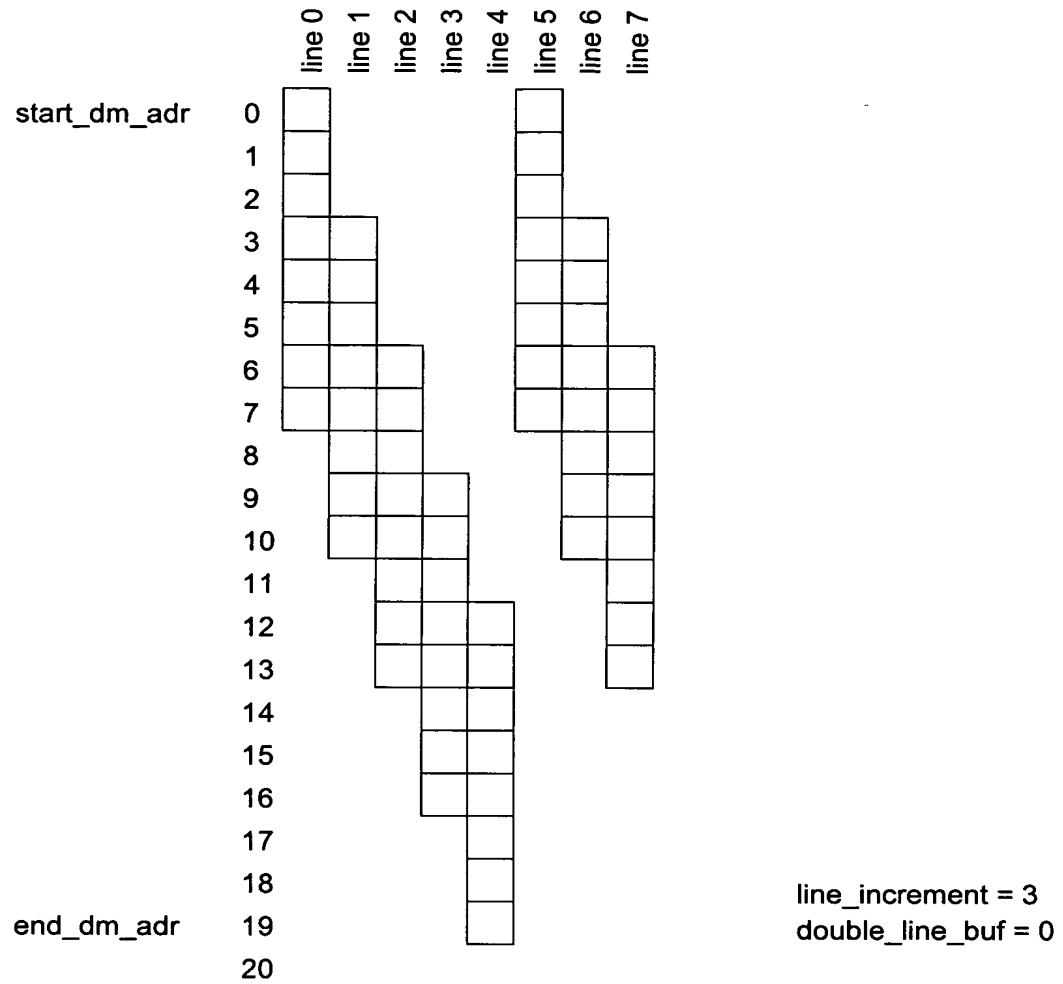


FIG. 237

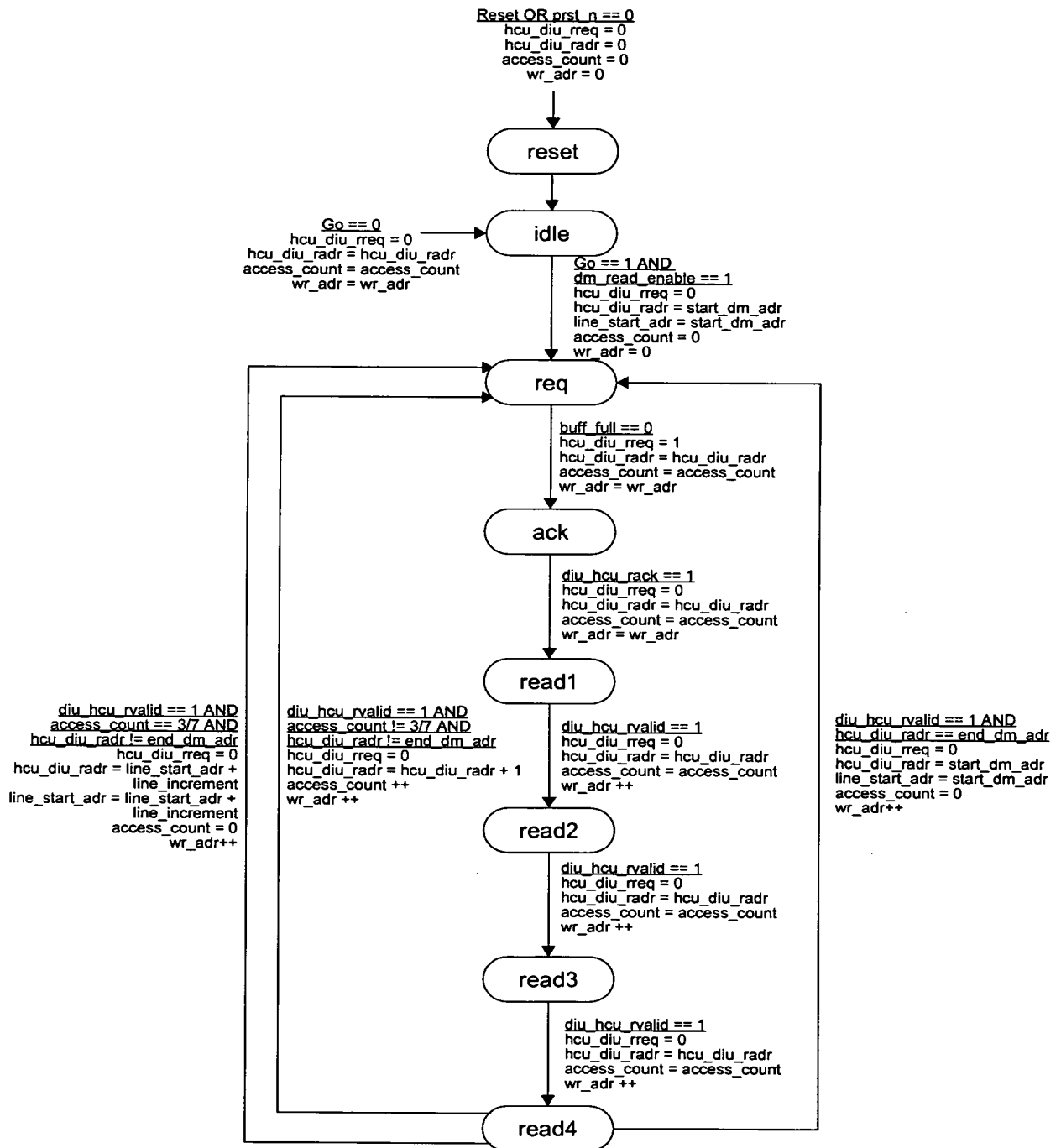


FIG. 238

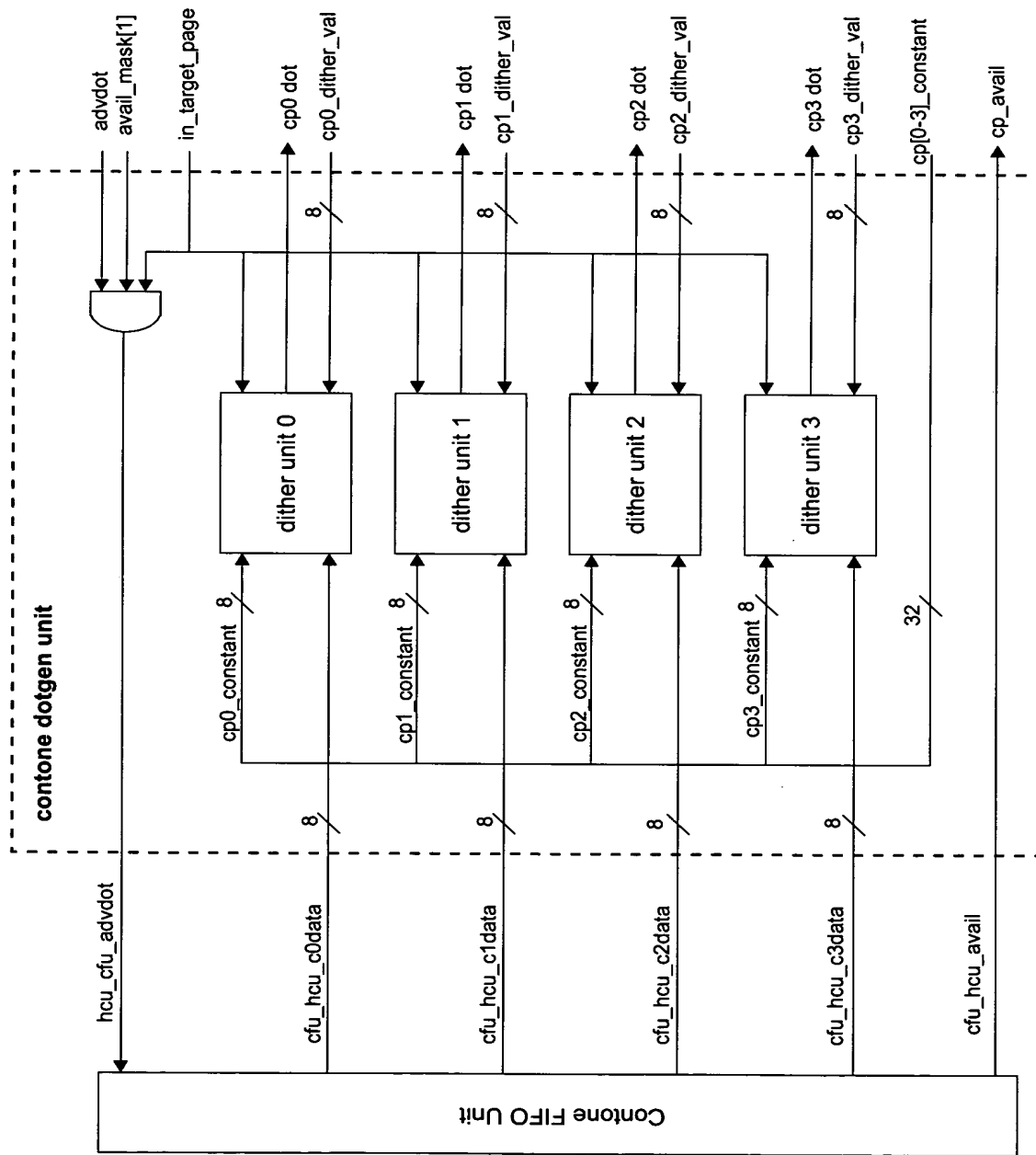


FIG. 239

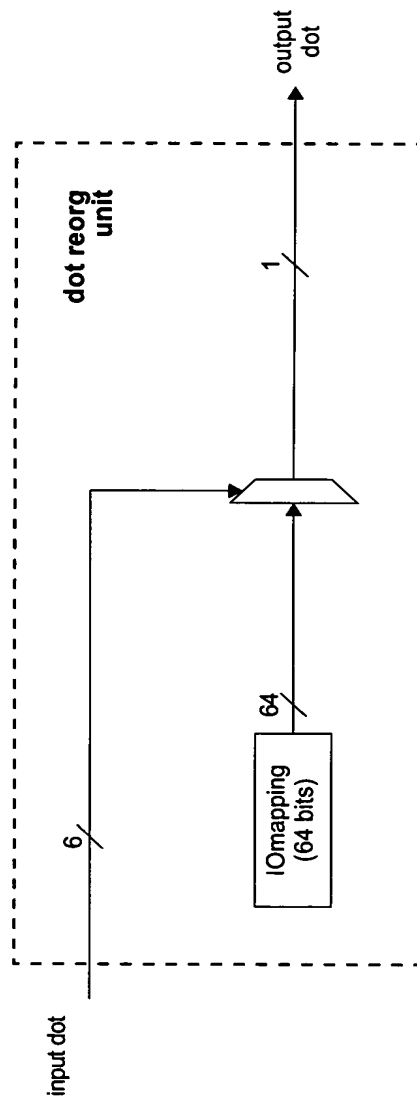


FIG. 240

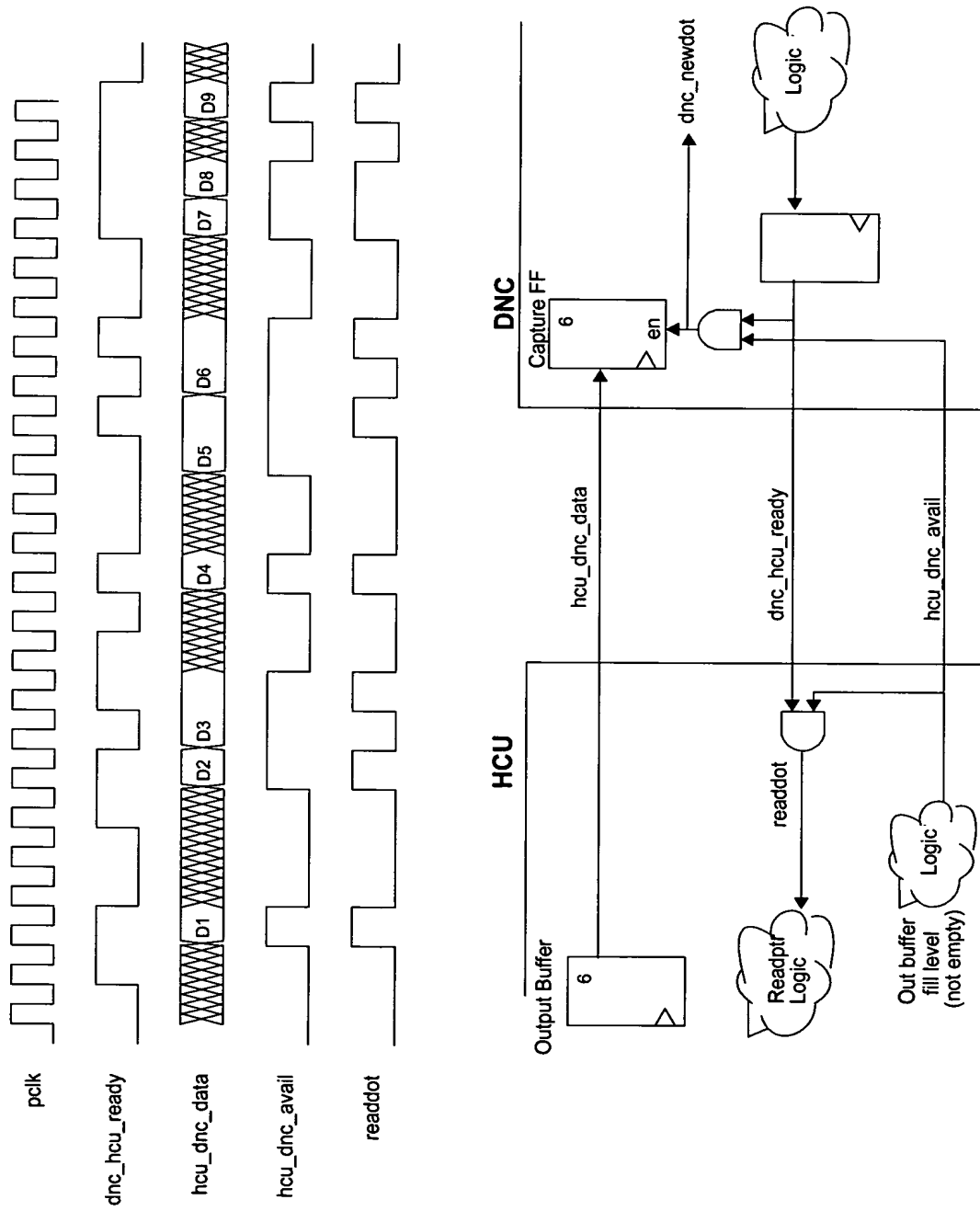


FIG. 241

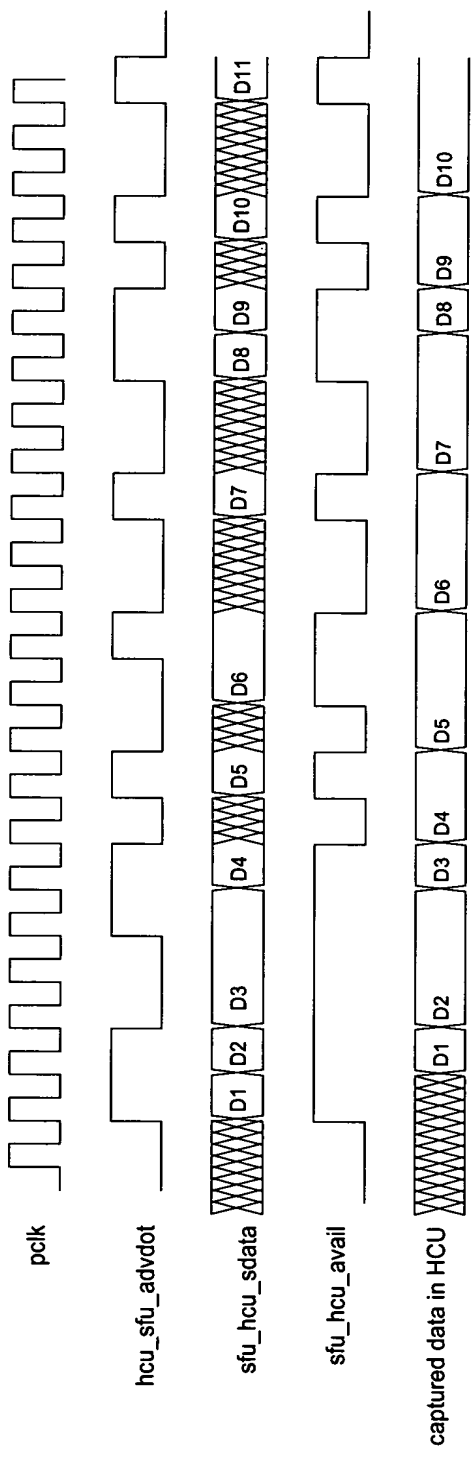


FIG. 242



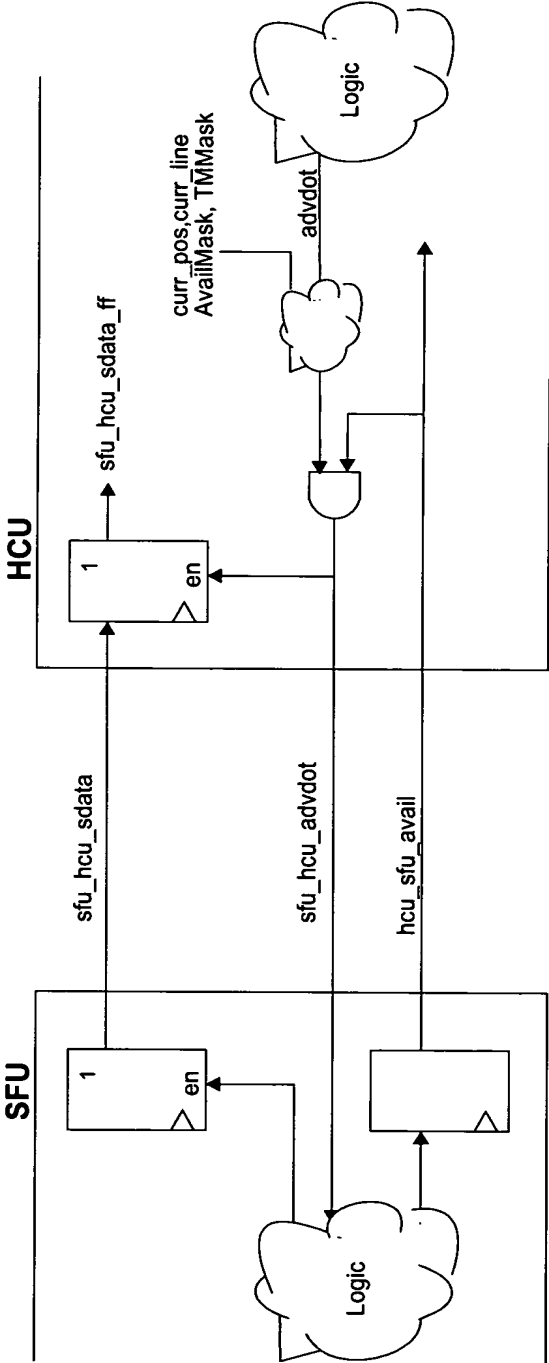


FIG. 243

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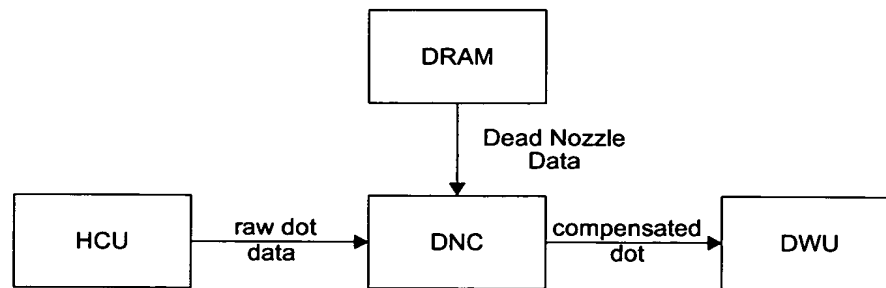


FIG. 244

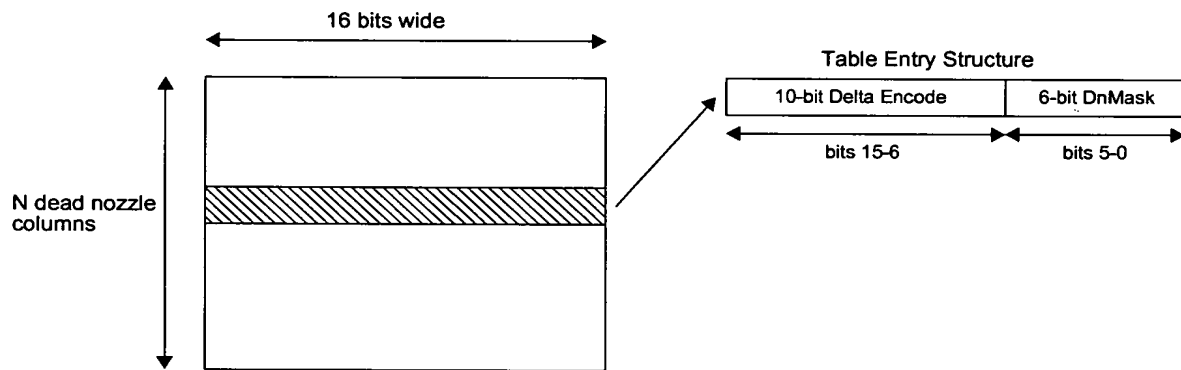


FIG. 245

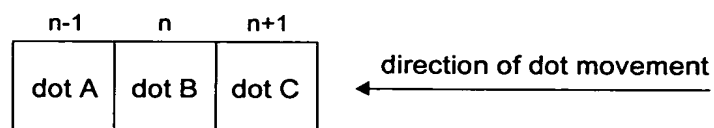


FIG. 246

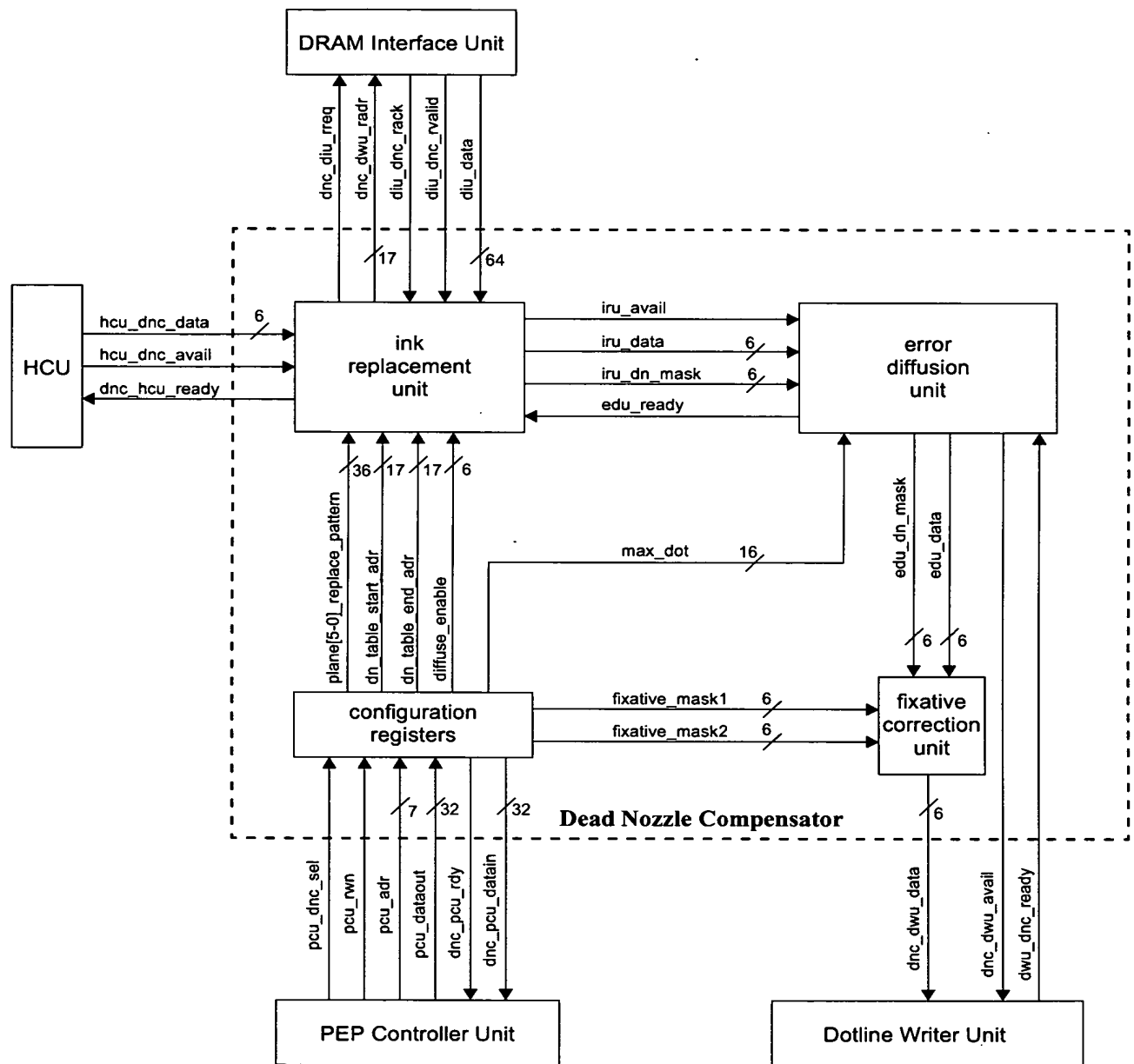


FIG. 247

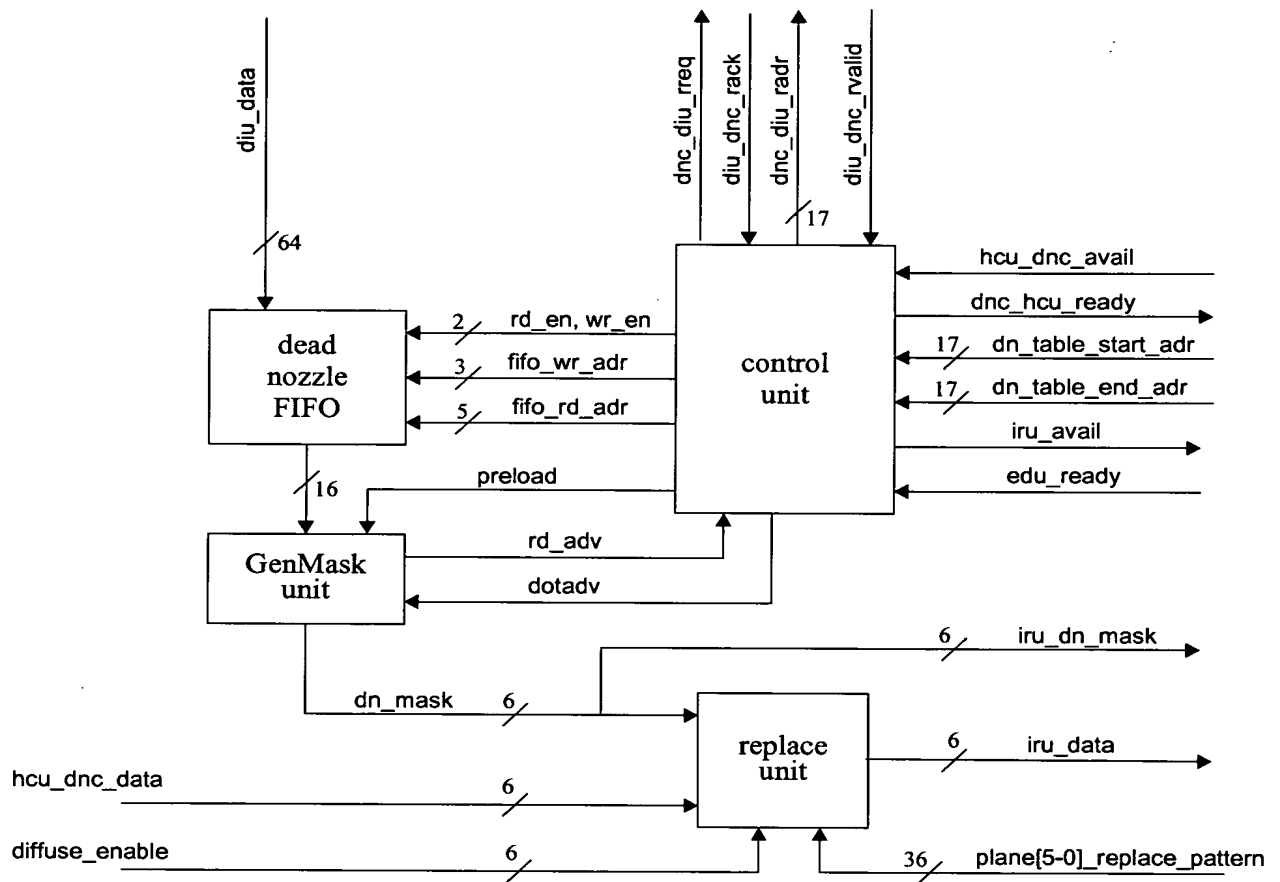


FIG. 248

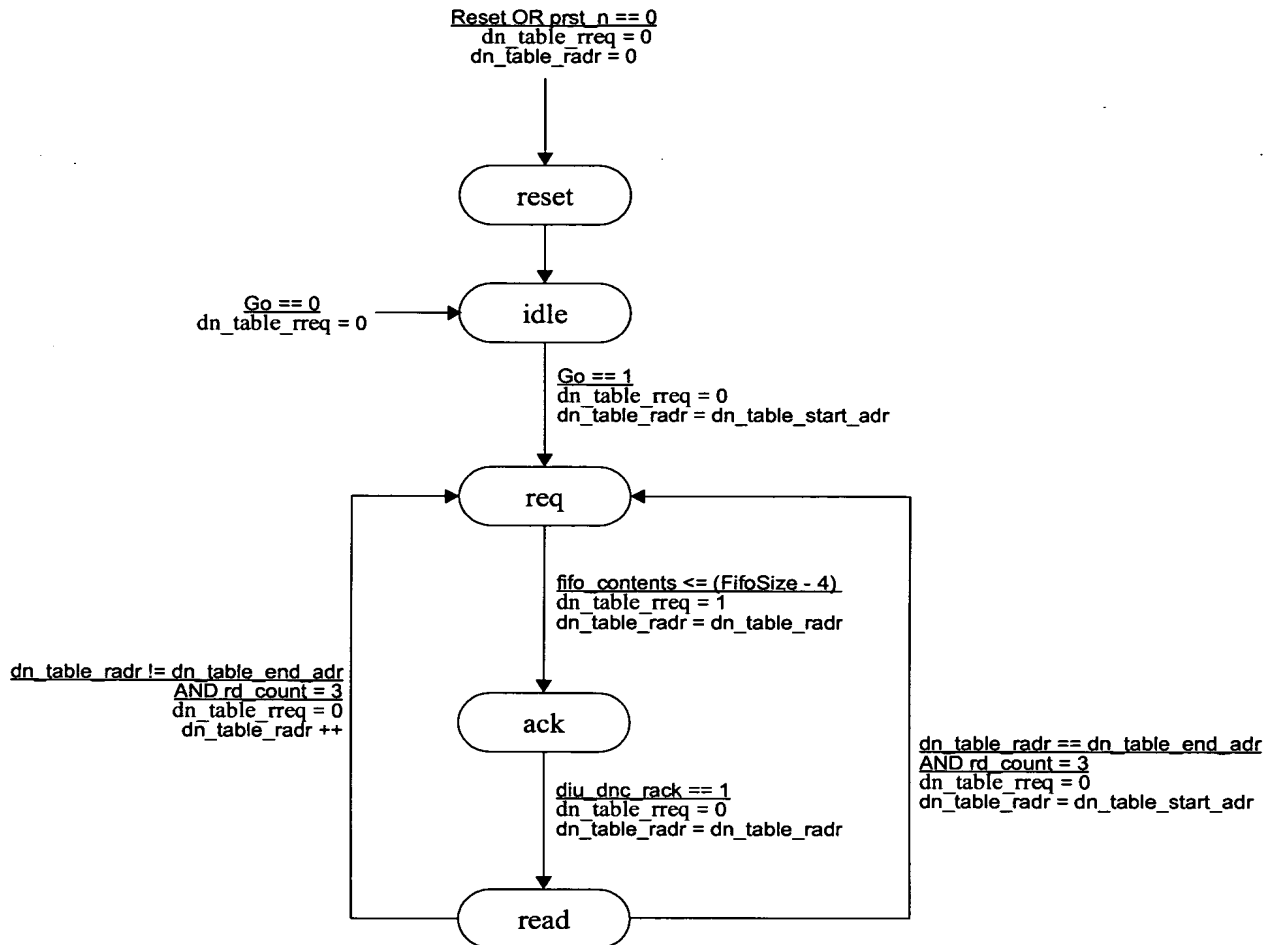


FIG. 249

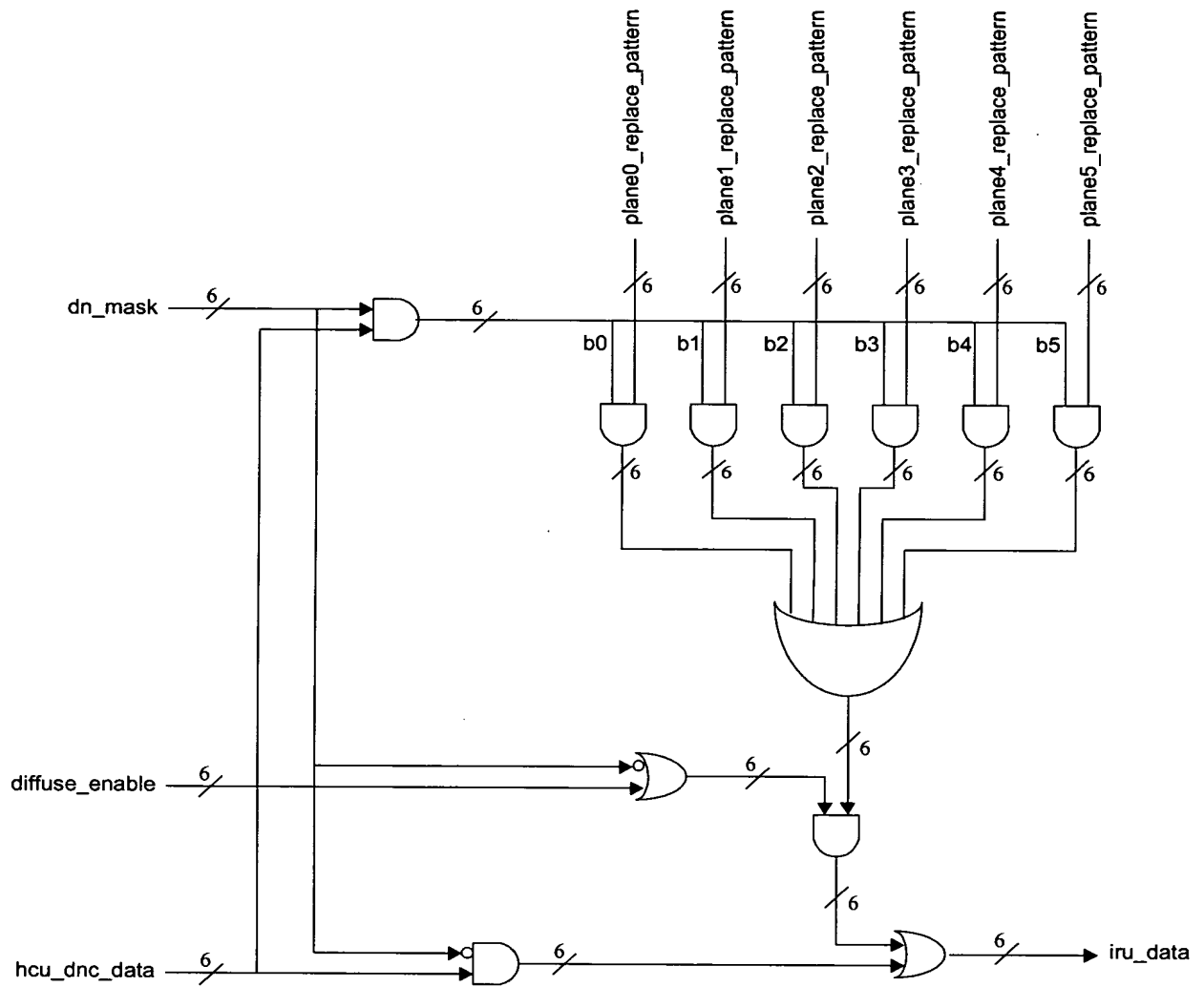


FIG. 250

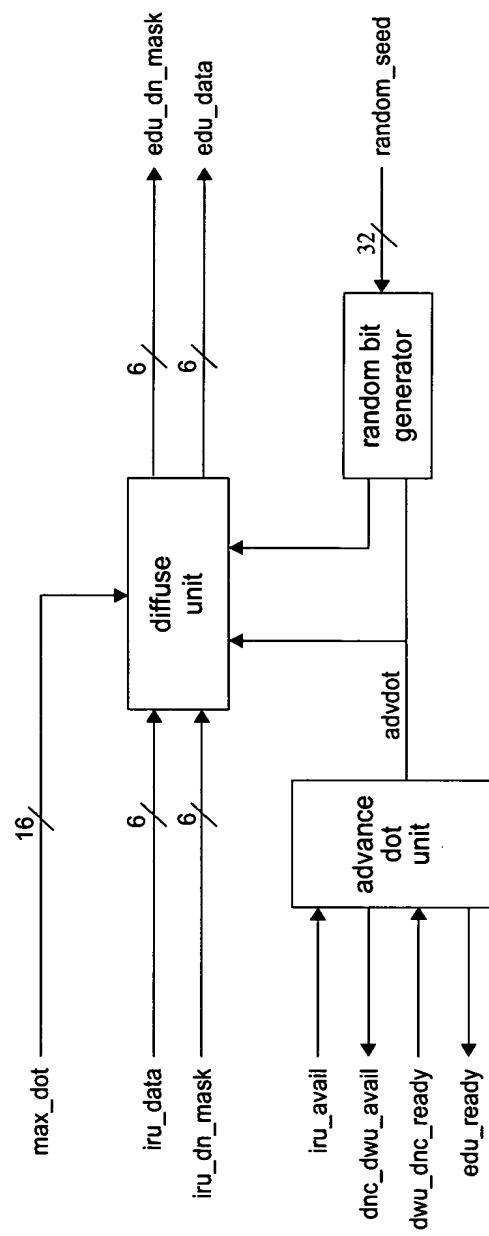


FIG. 251

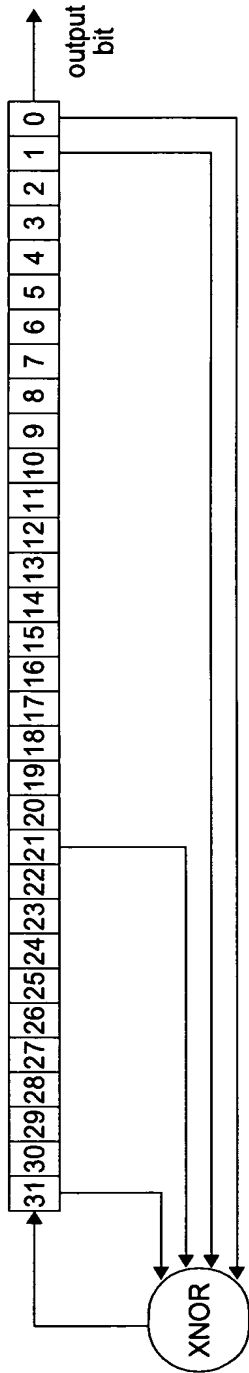


FIG. 252

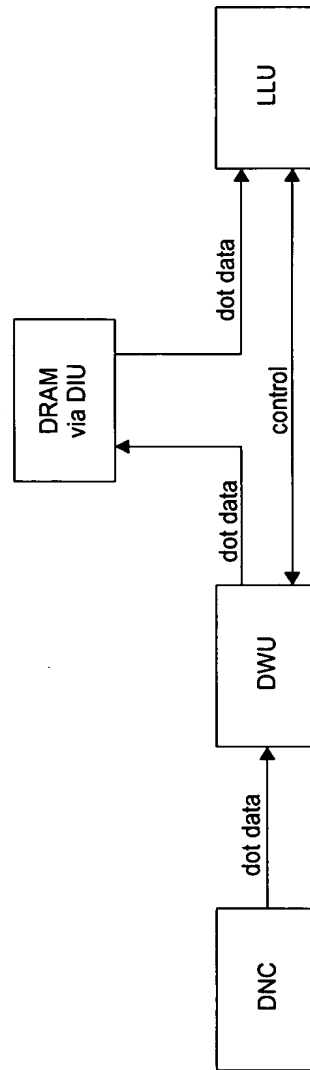
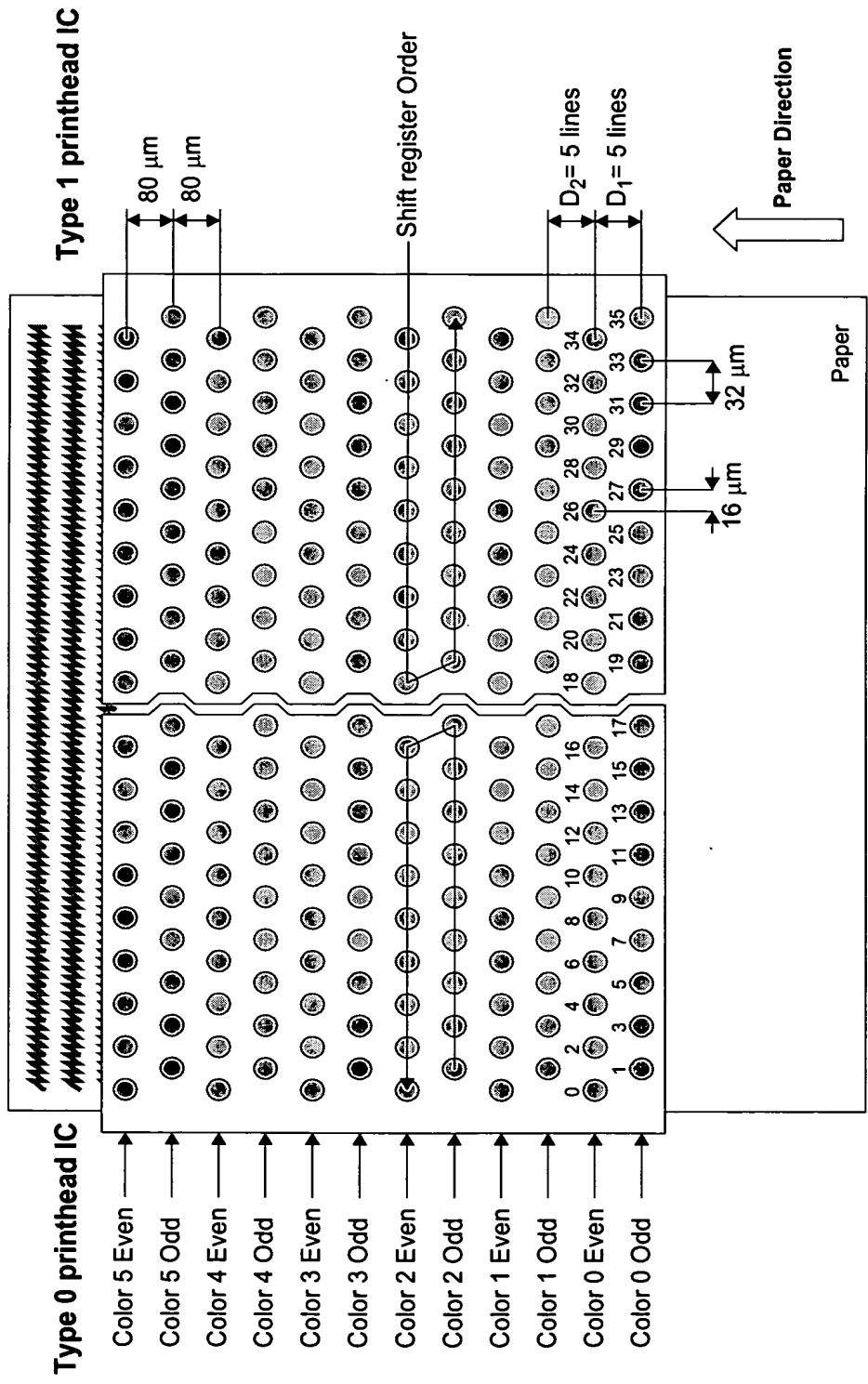


FIG. 253





Note: Paper passes under printhead

FIG. 254

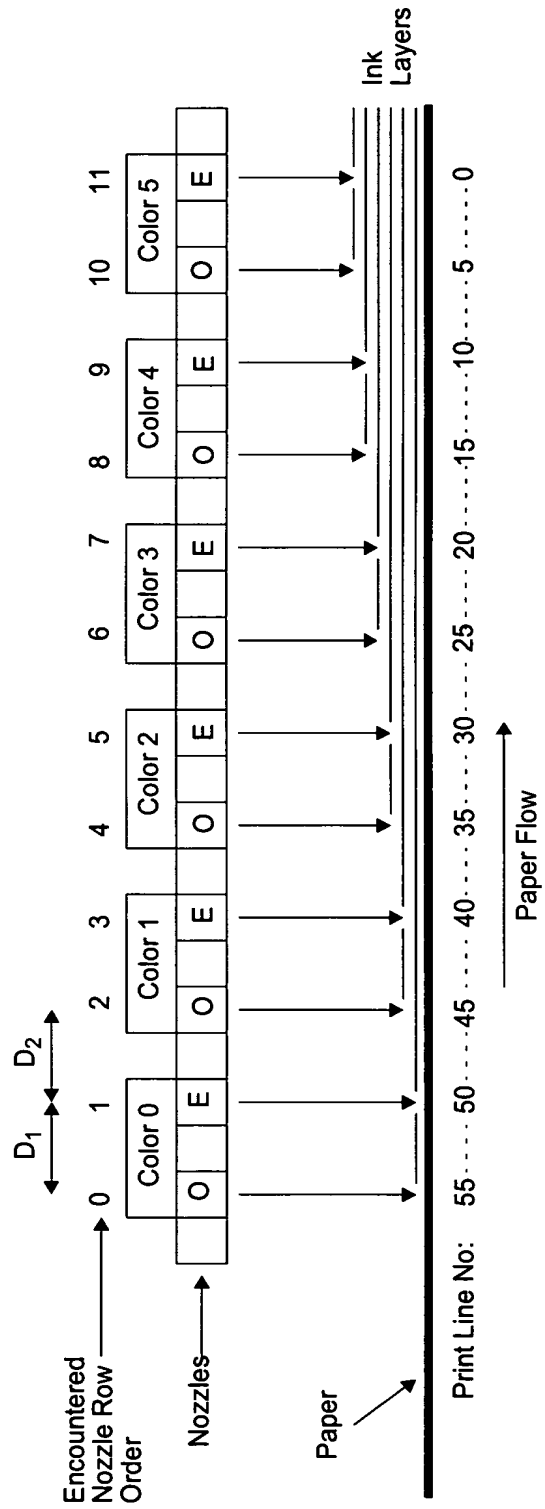


FIG. 255

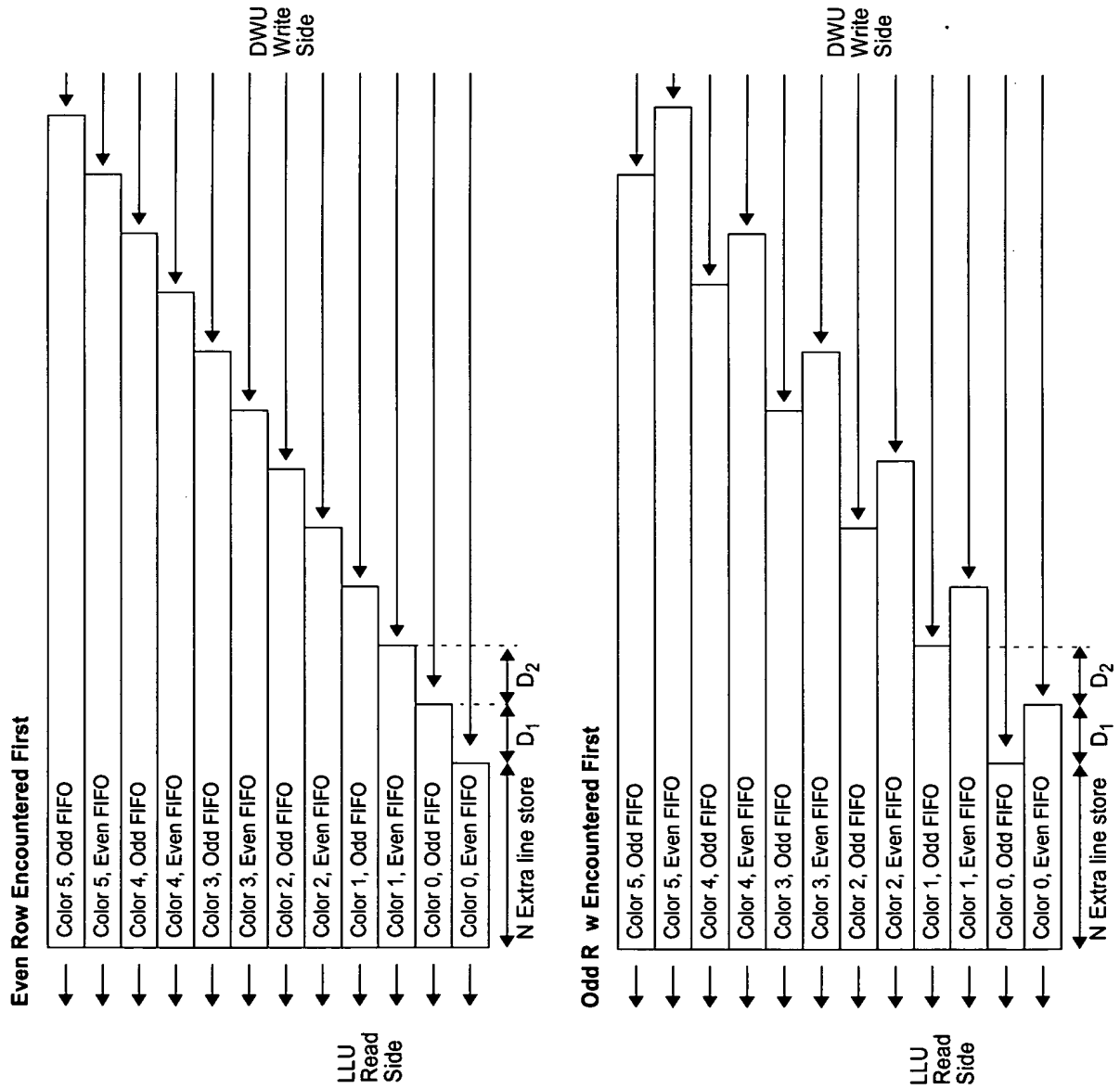


FIG. 256

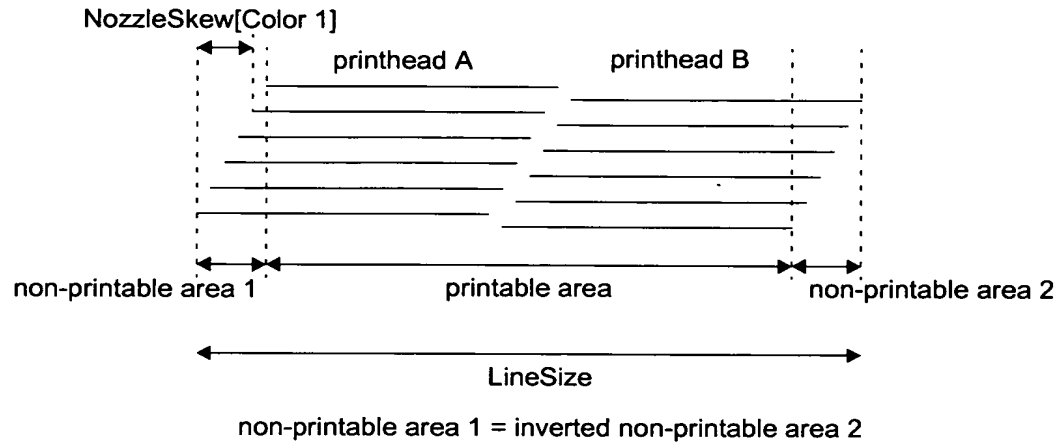


FIG. 257

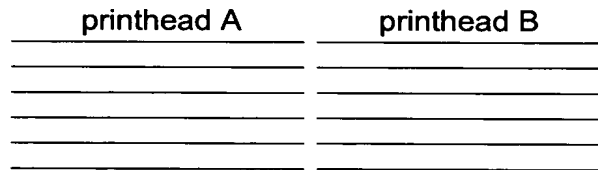


FIG. 258

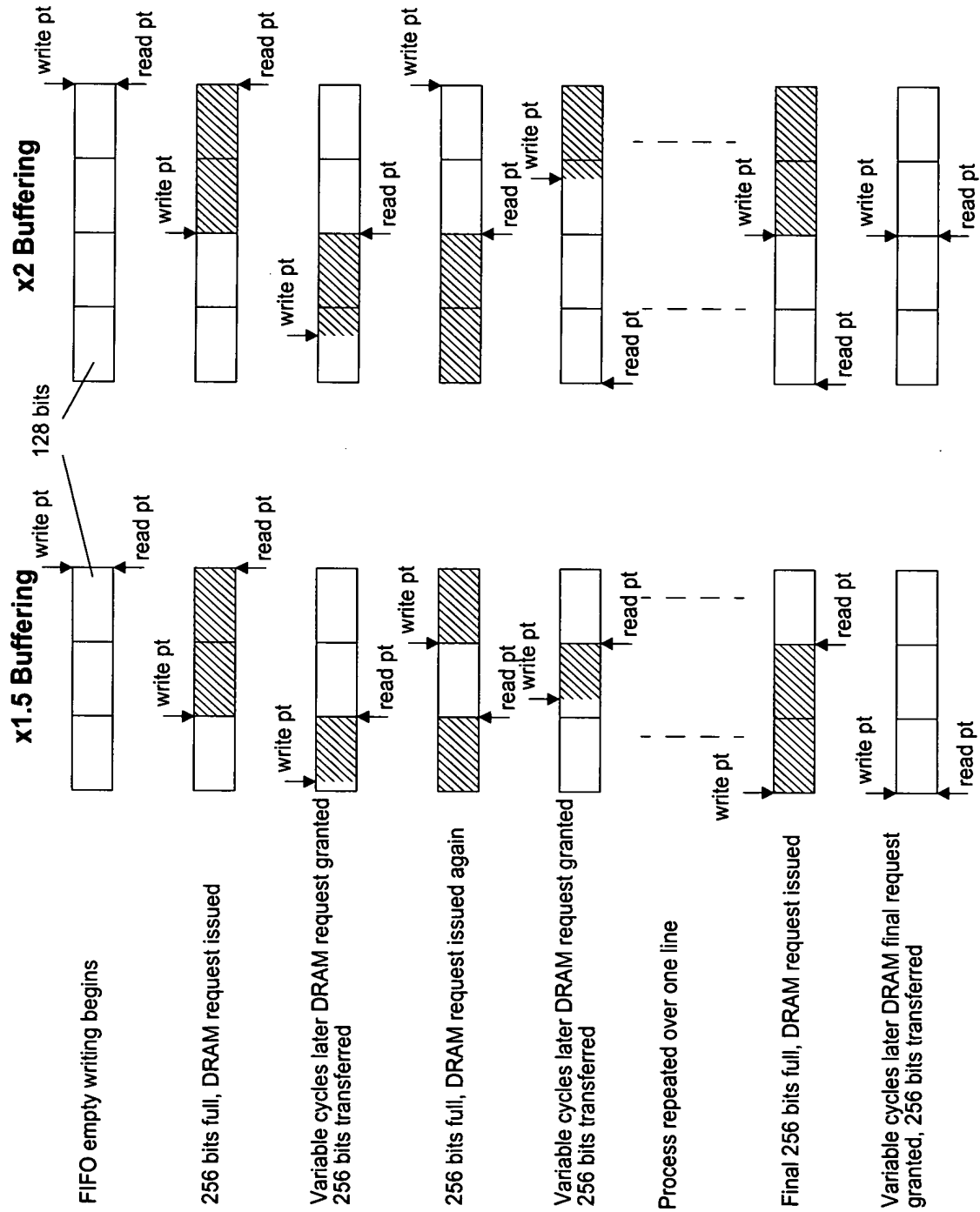


FIG. 259

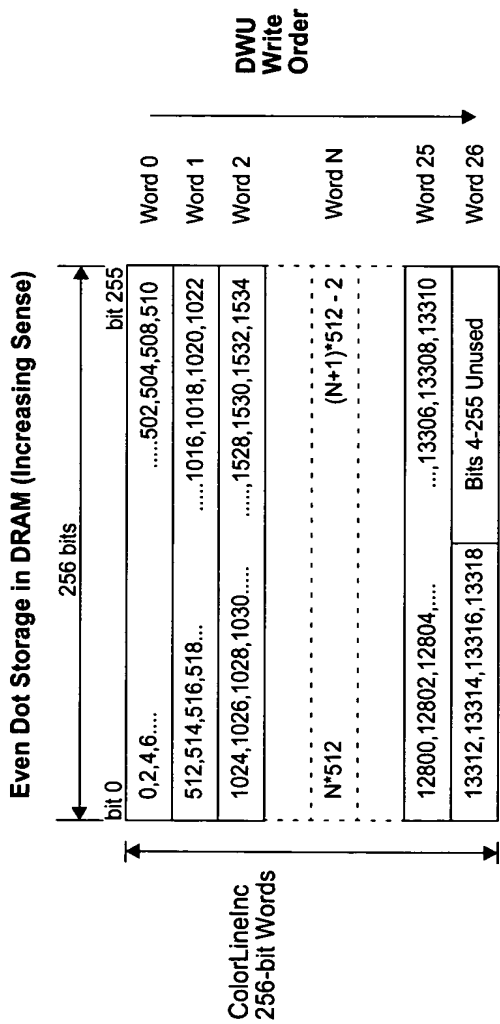


FIG. 260

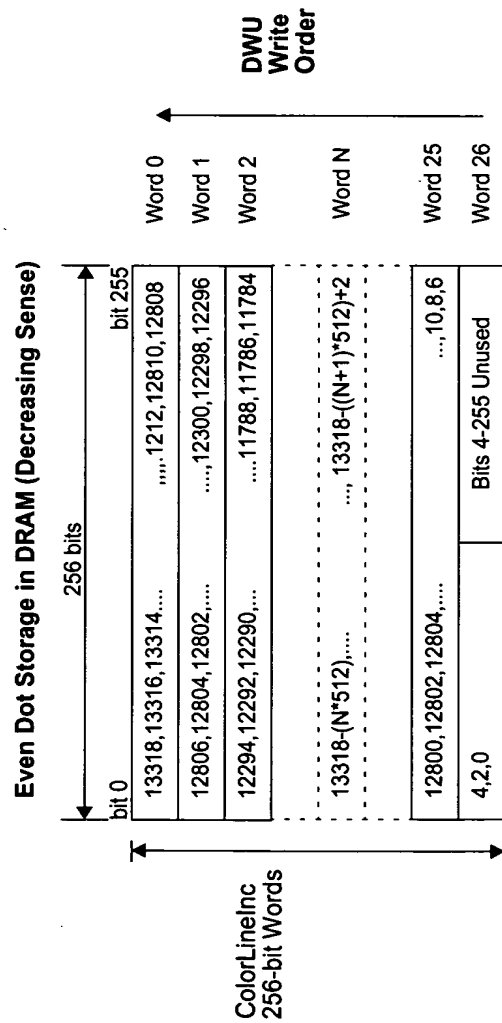


FIG. 261

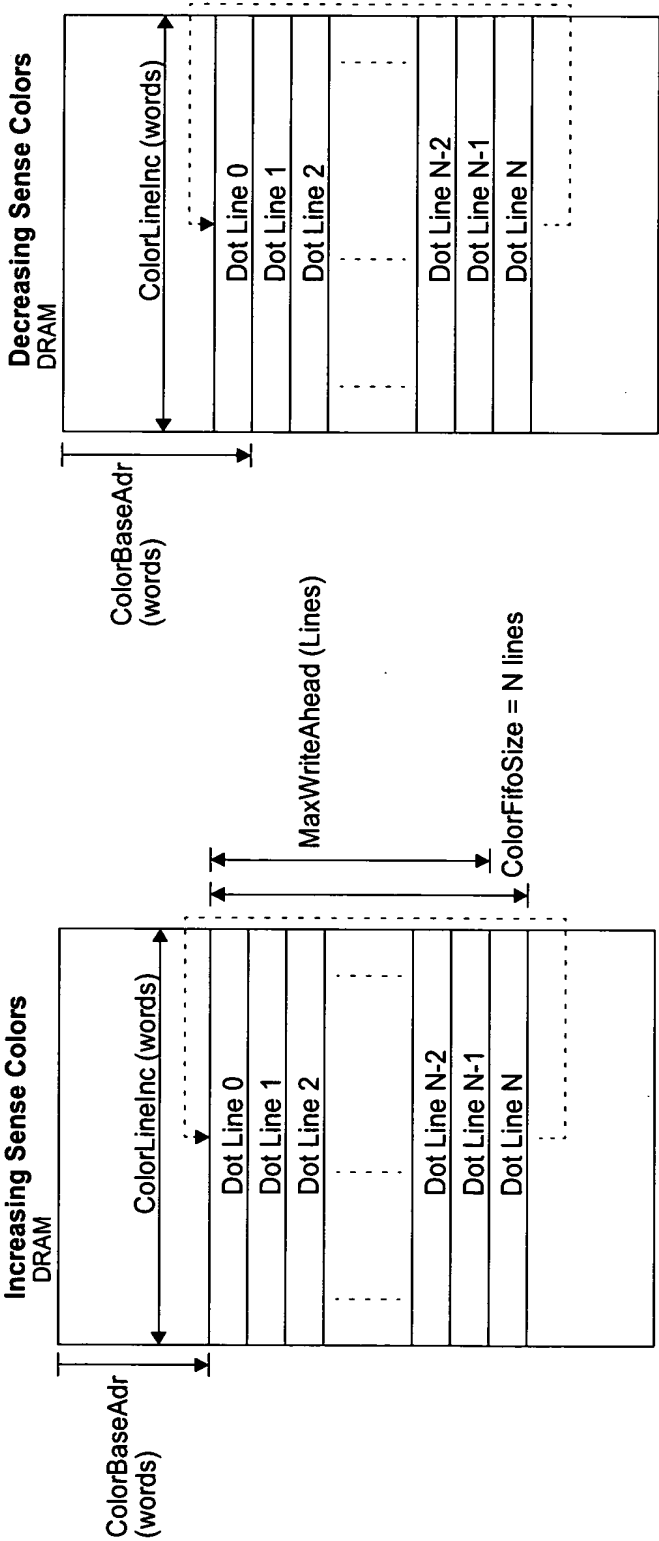


FIG. 262

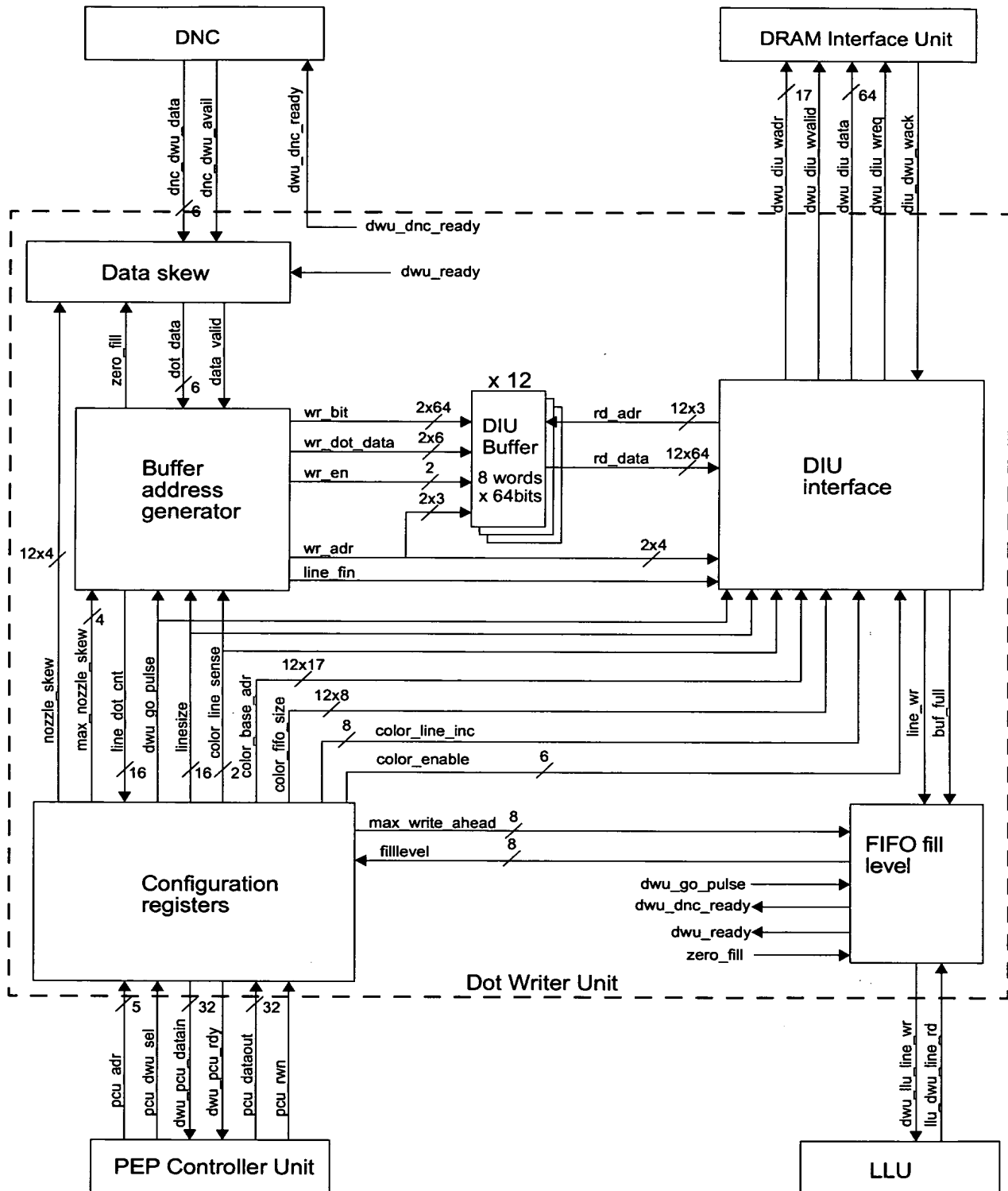


FIG. 263



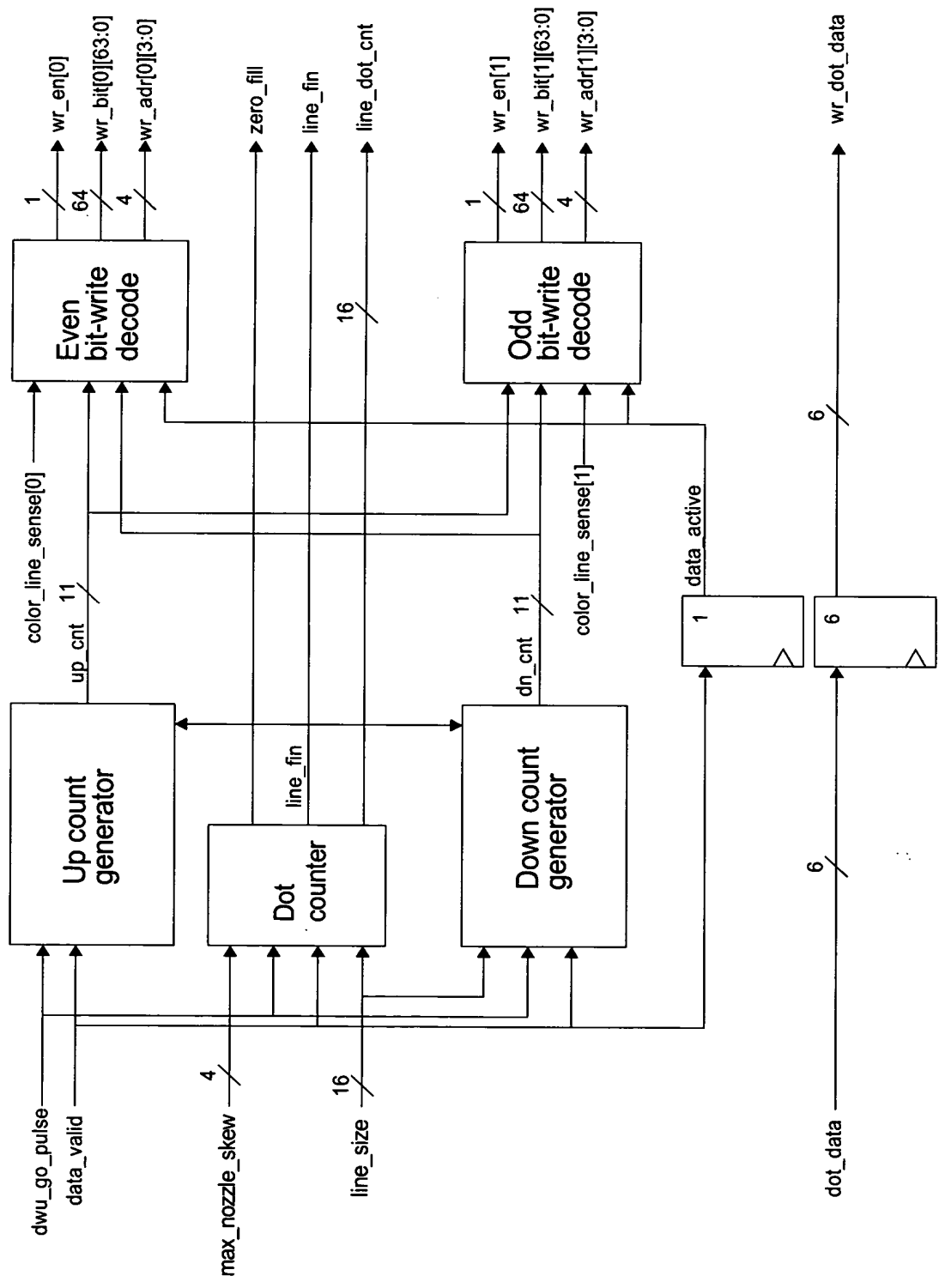


FIG. 264

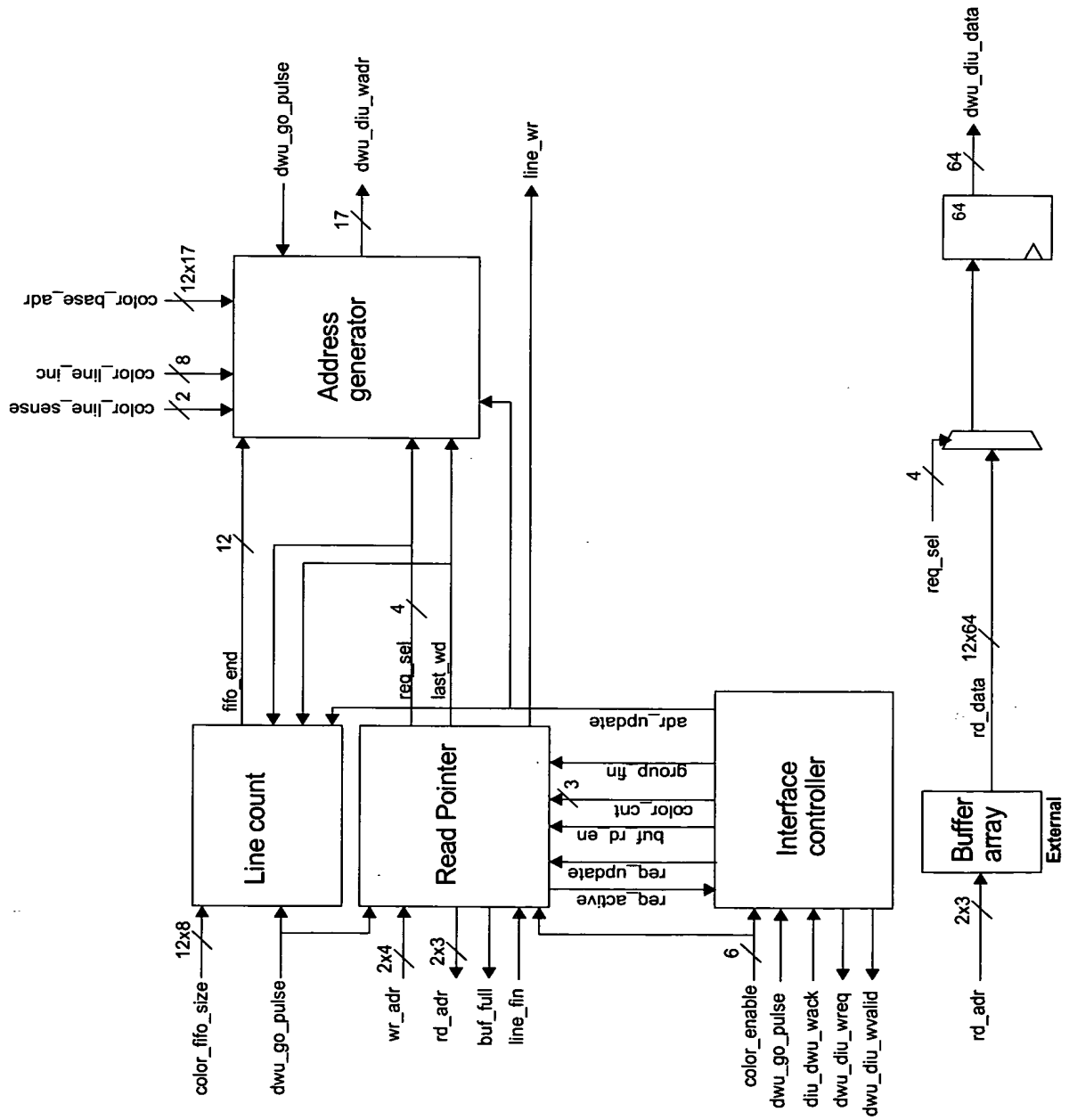


FIG. 265

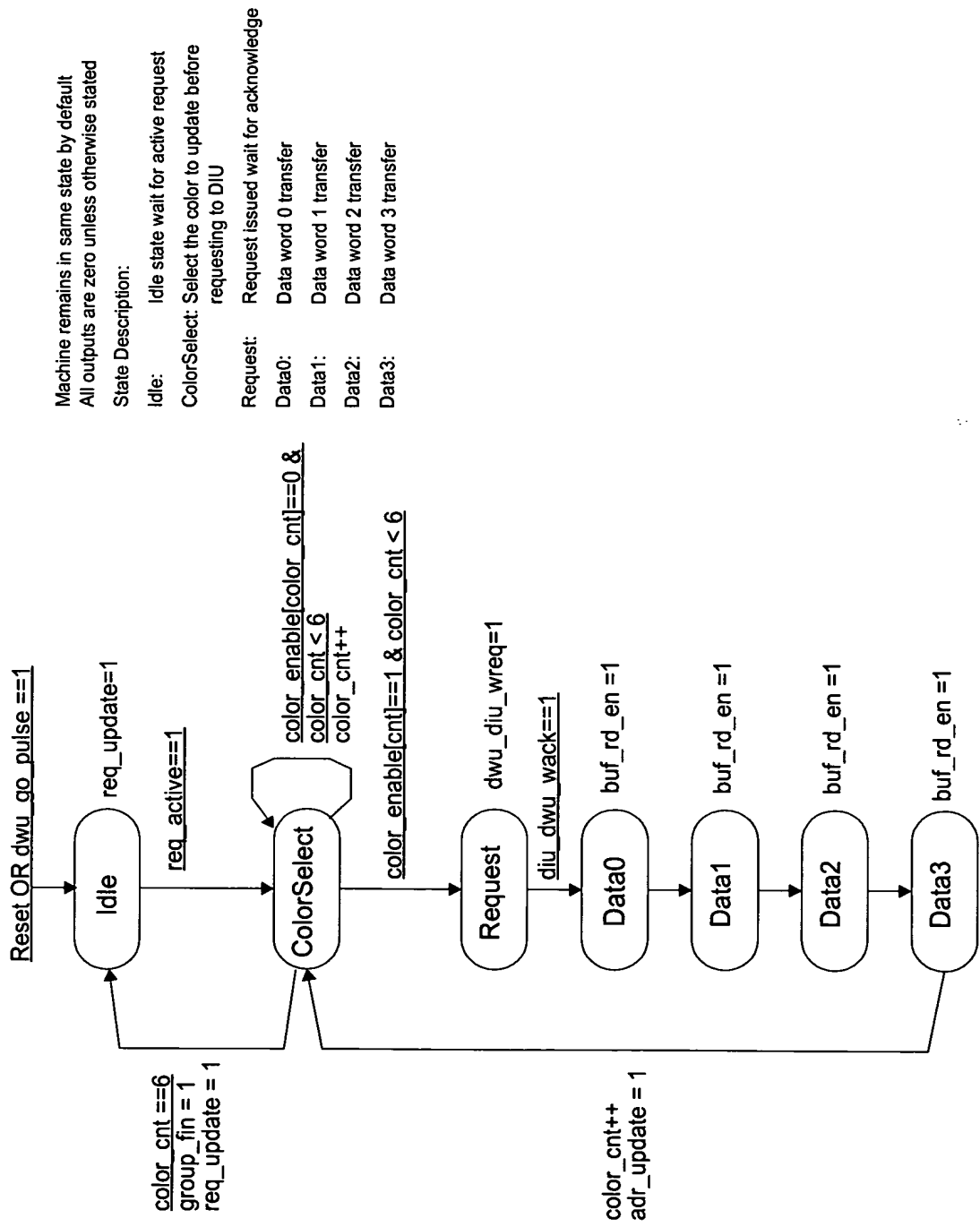


FIG. 266

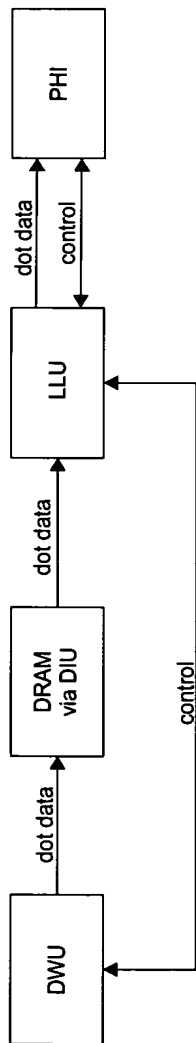


FIG. 267

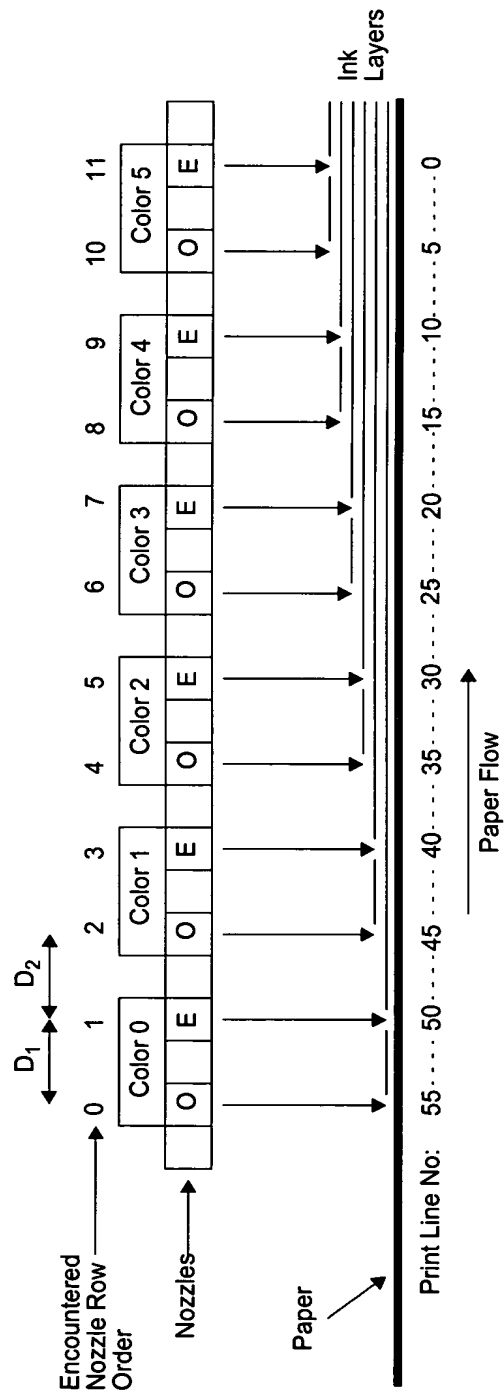
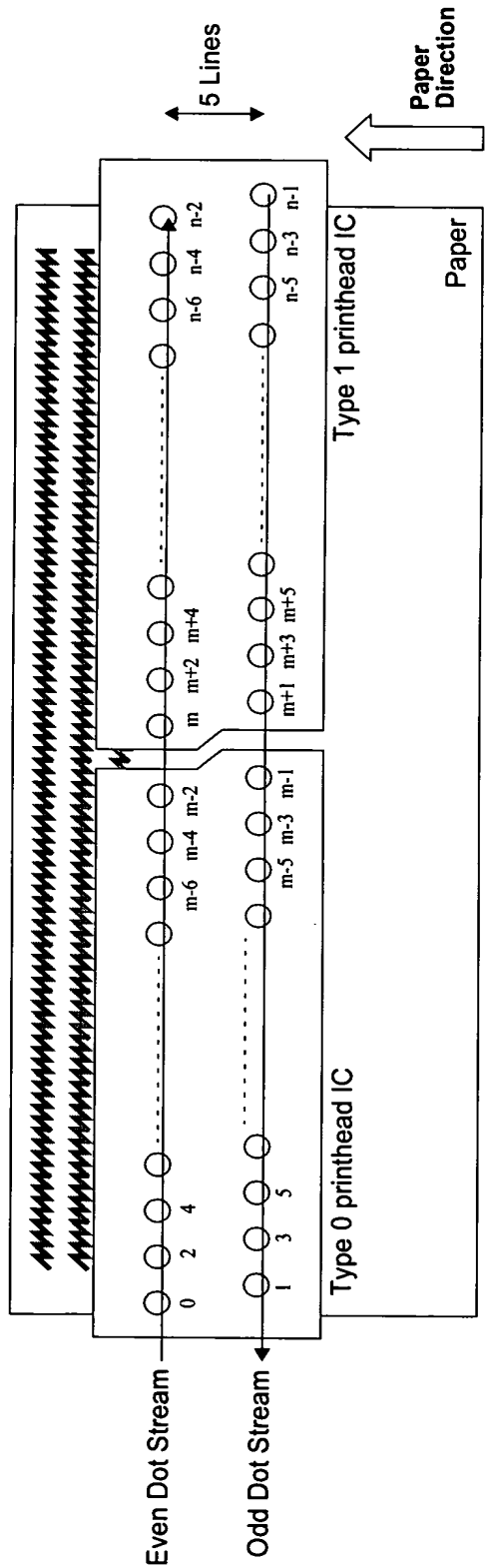


FIG. 268



M - Midway point in dots  
N - Number of dots in a line

Note: Paper passing under printhead

FIG. 269

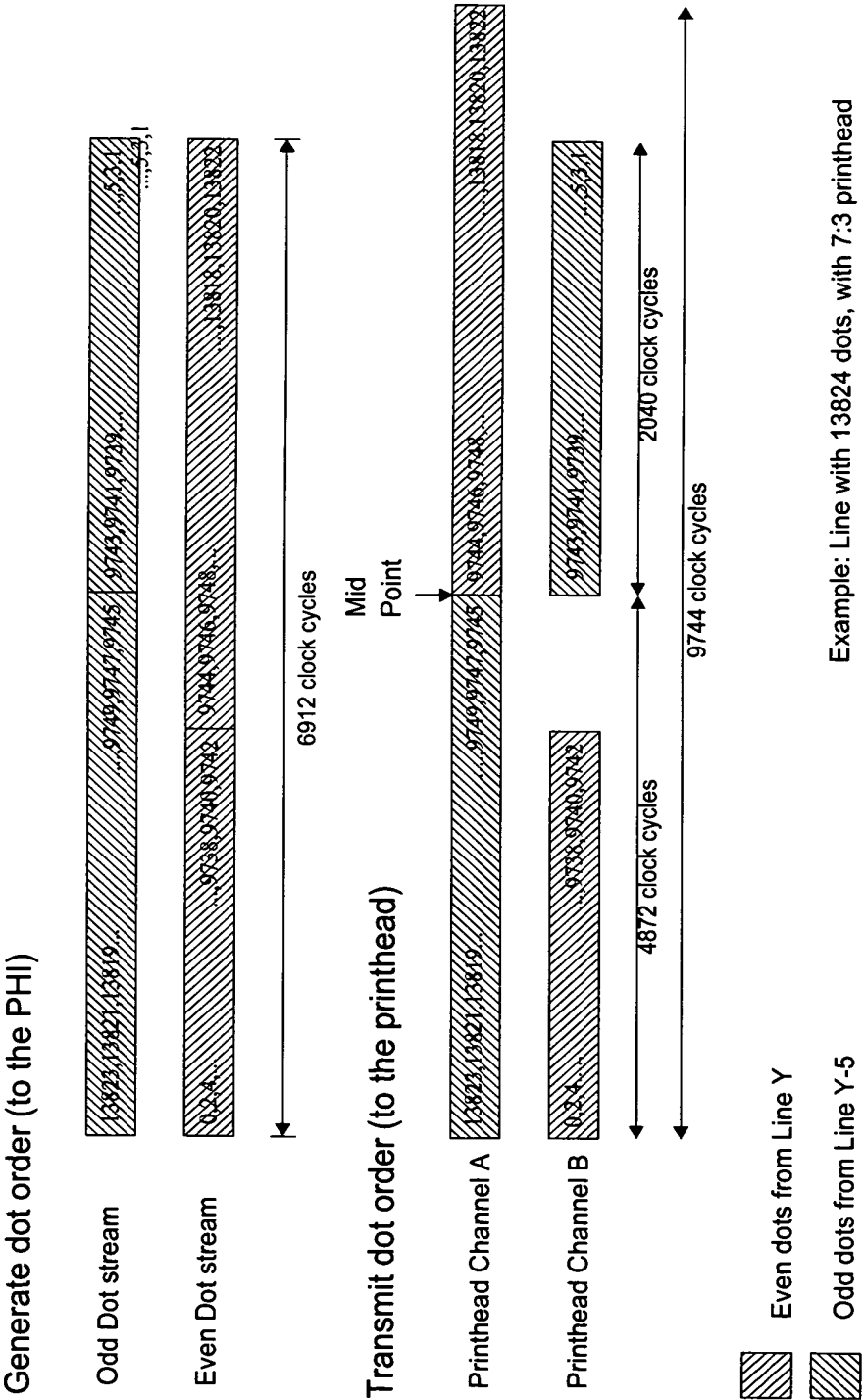


FIG. 270

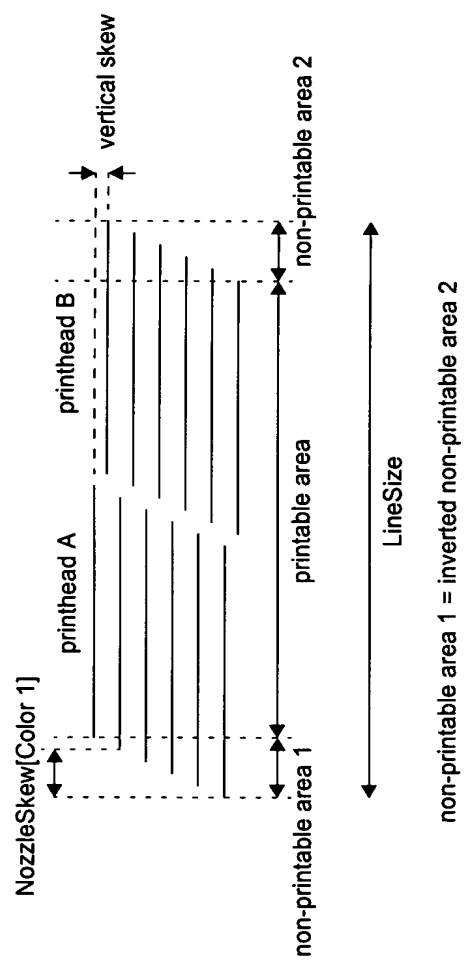


FIG. 271

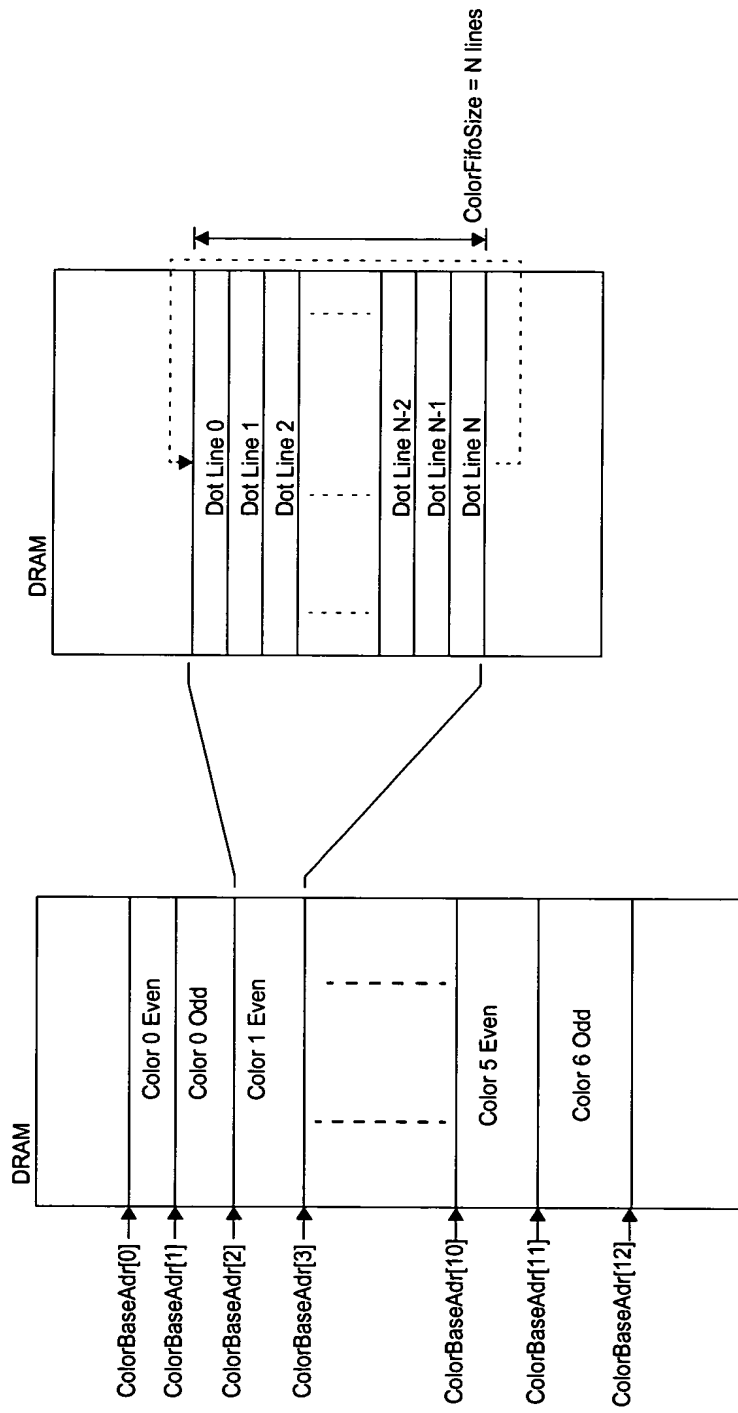
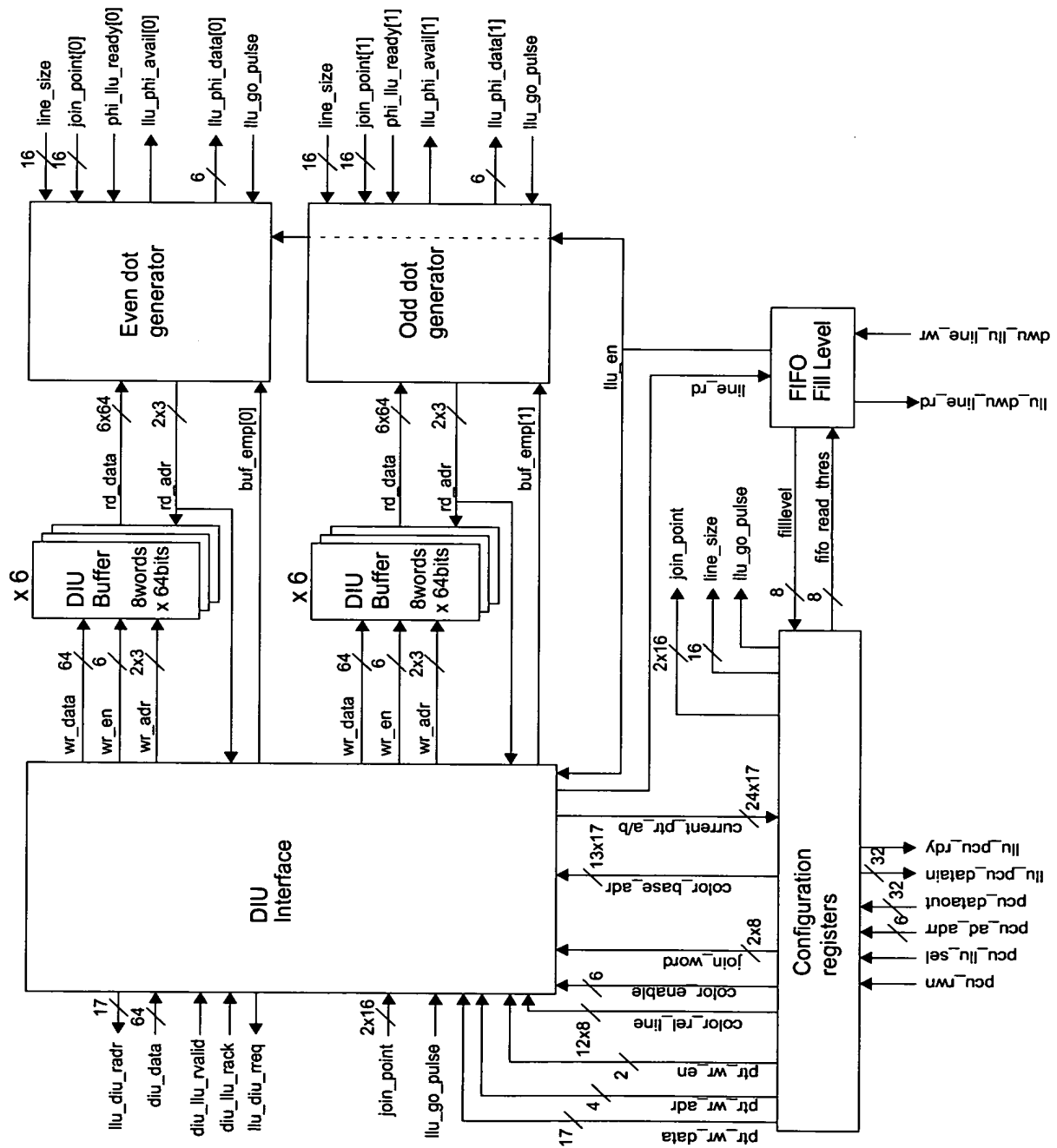


FIG. 272





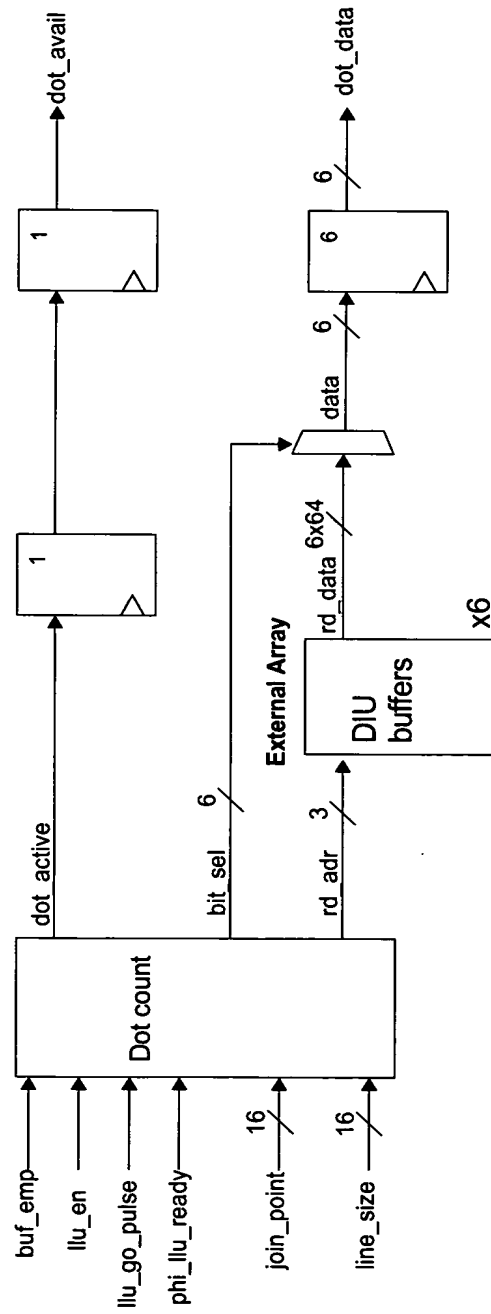


FIG. 274

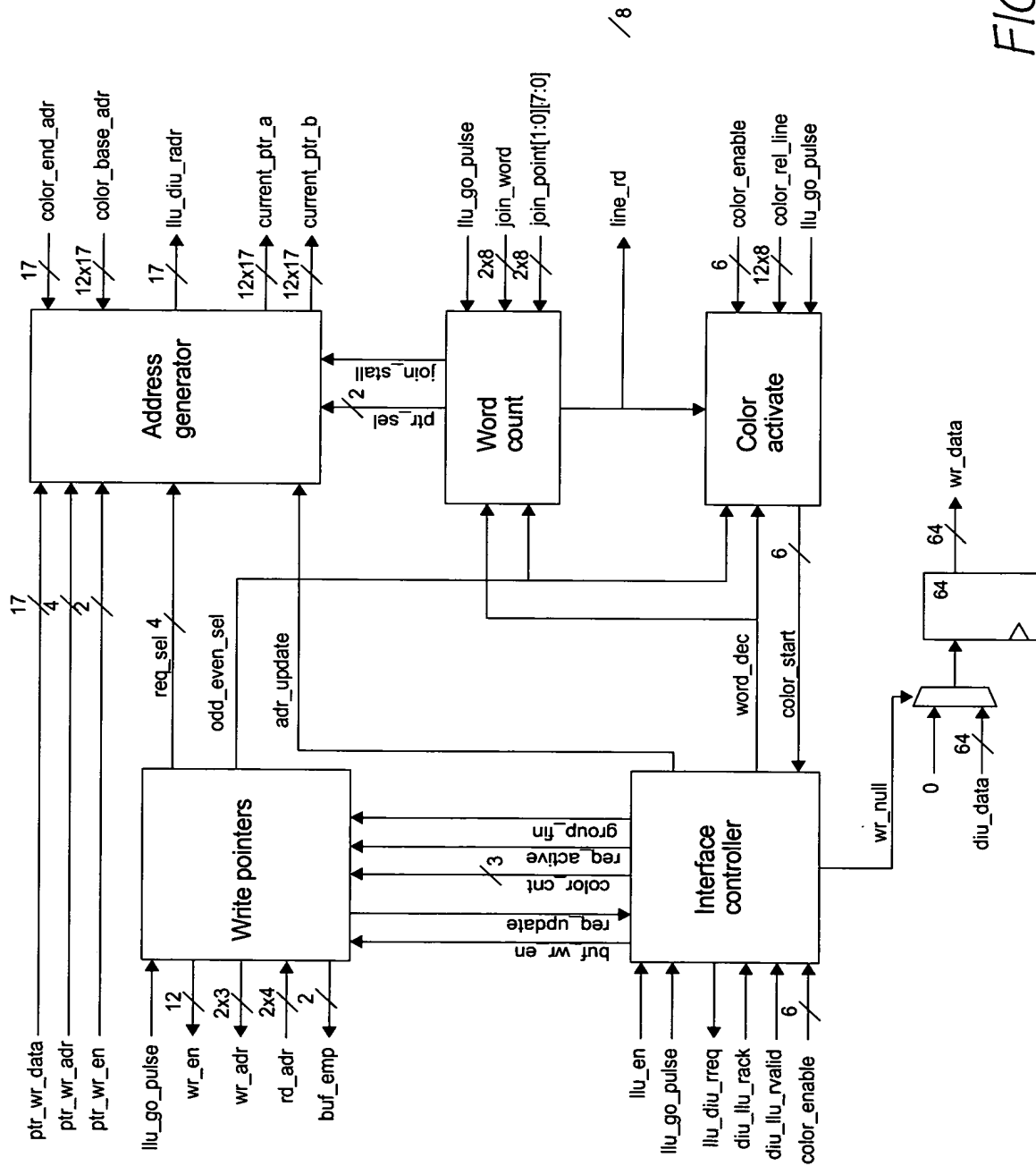


FIG. 275

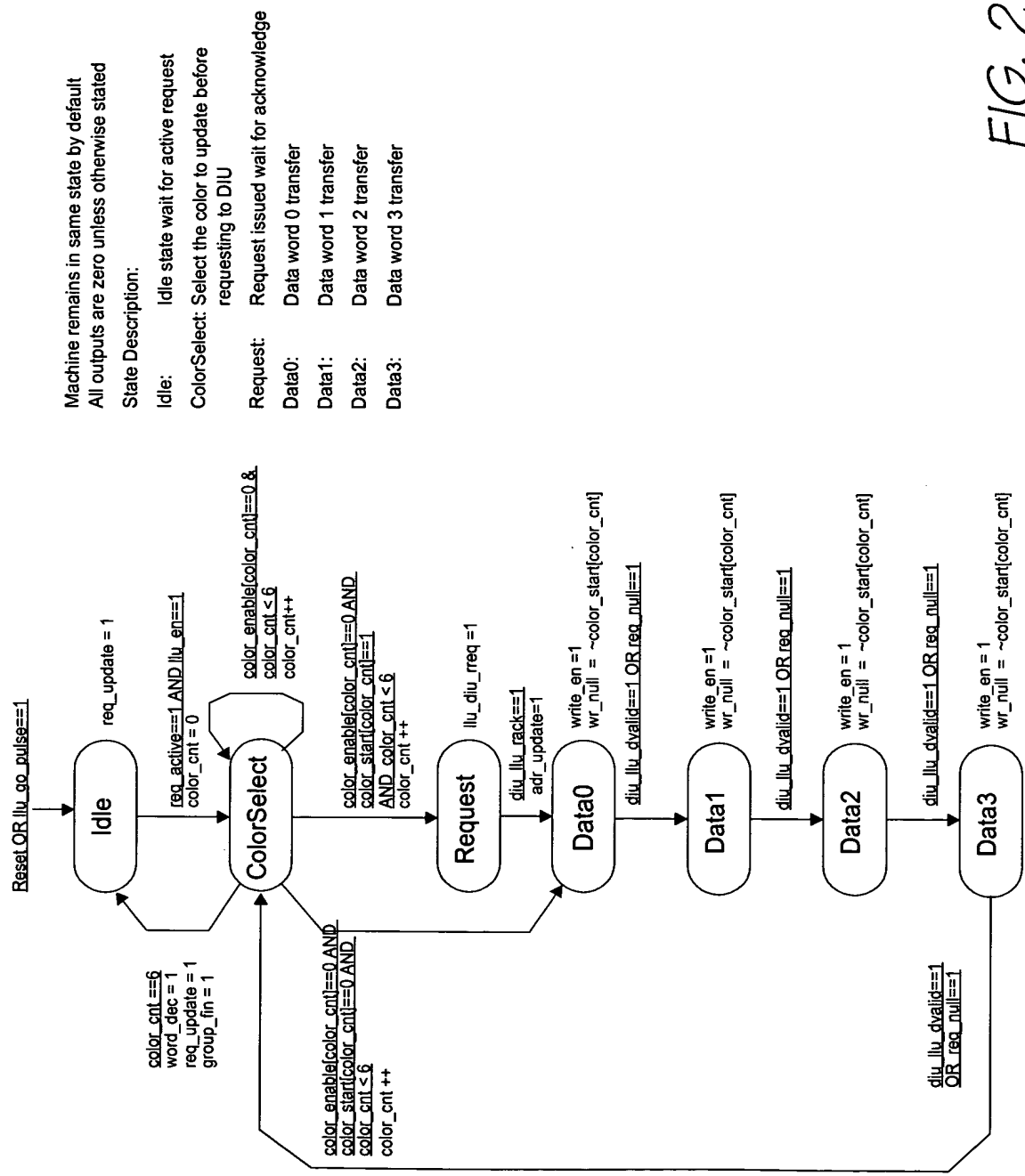


FIG. 276

Machine remains in same state by default  
All outputs are zero unless otherwise stated

State Description:

Idle: Idle state wait for active request

ColorSelect: Select the color to update before requesting to DIU

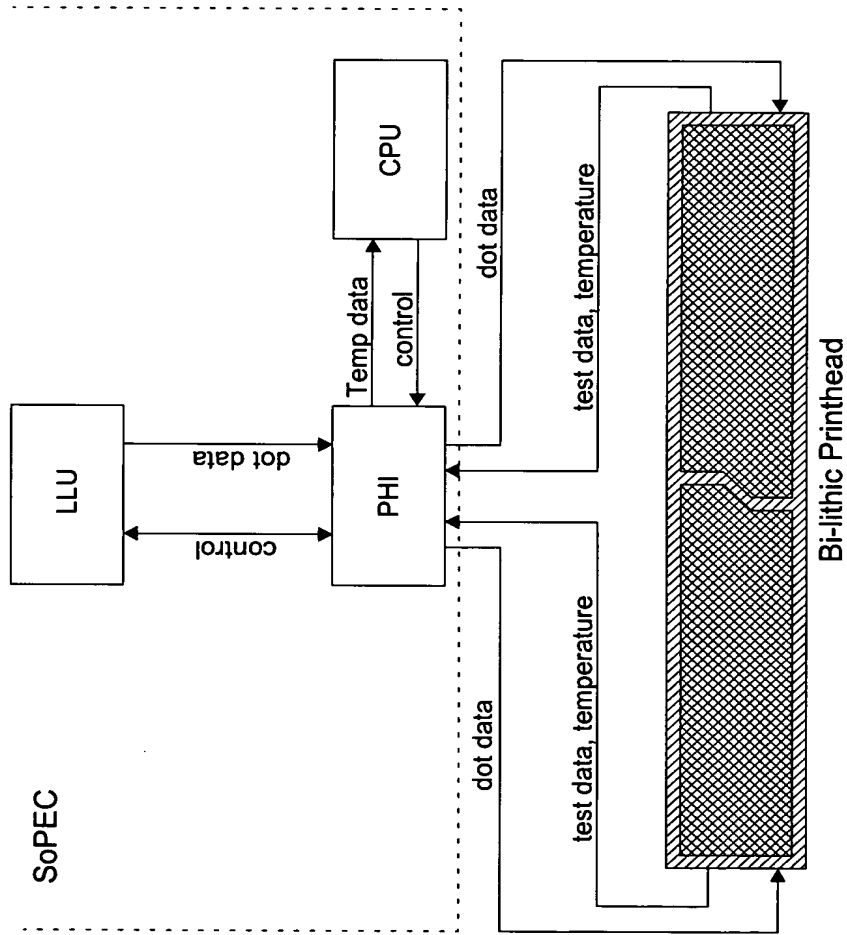
Request: Request issued wait for acknowledge

Data0: Data word 0 transfer

Data1: Data word 1 transfer

Data2: Data word 2 transfer

Data3: Data word 3 transfer

*FIG. 277*

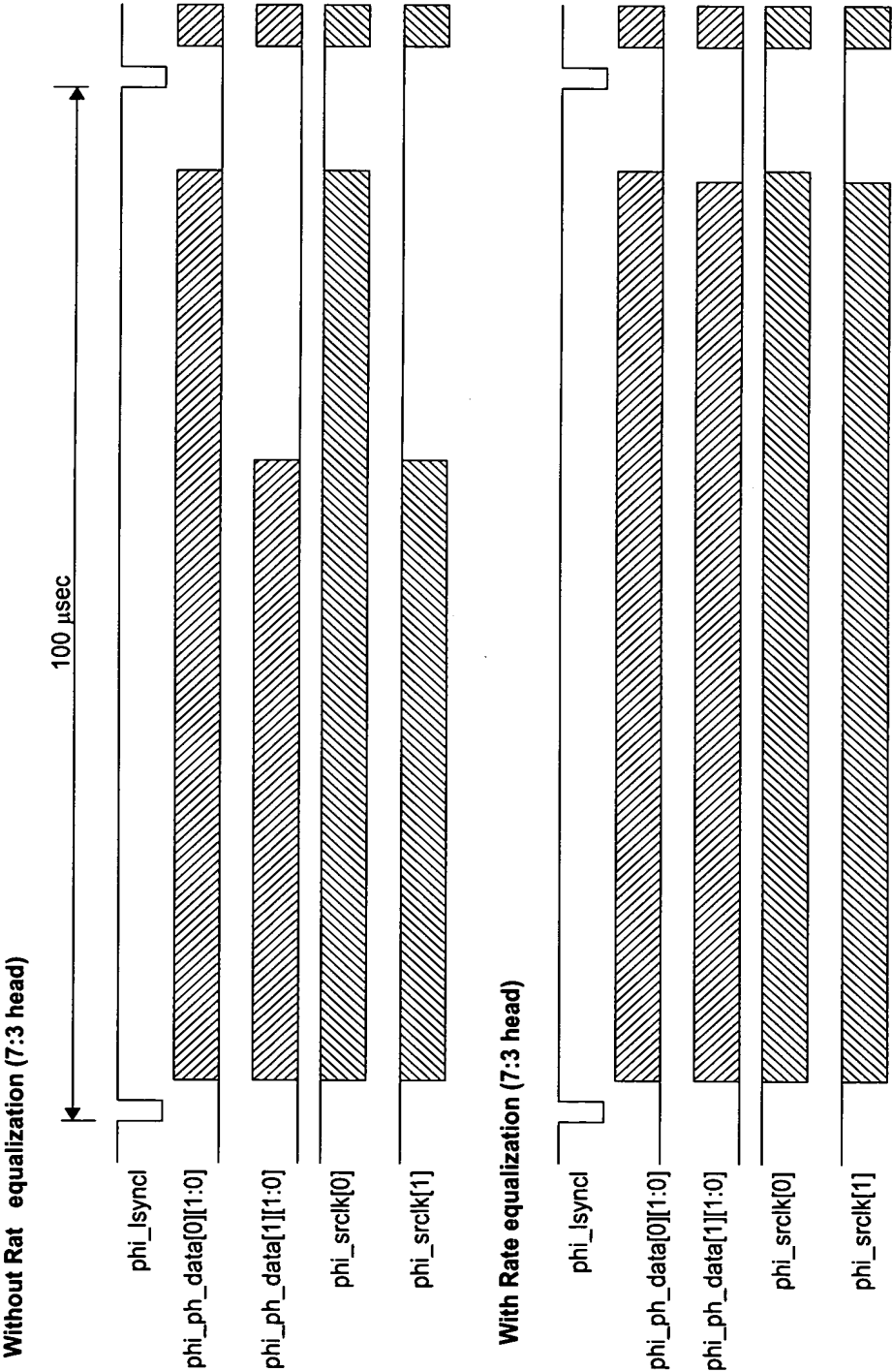


FIG. 279

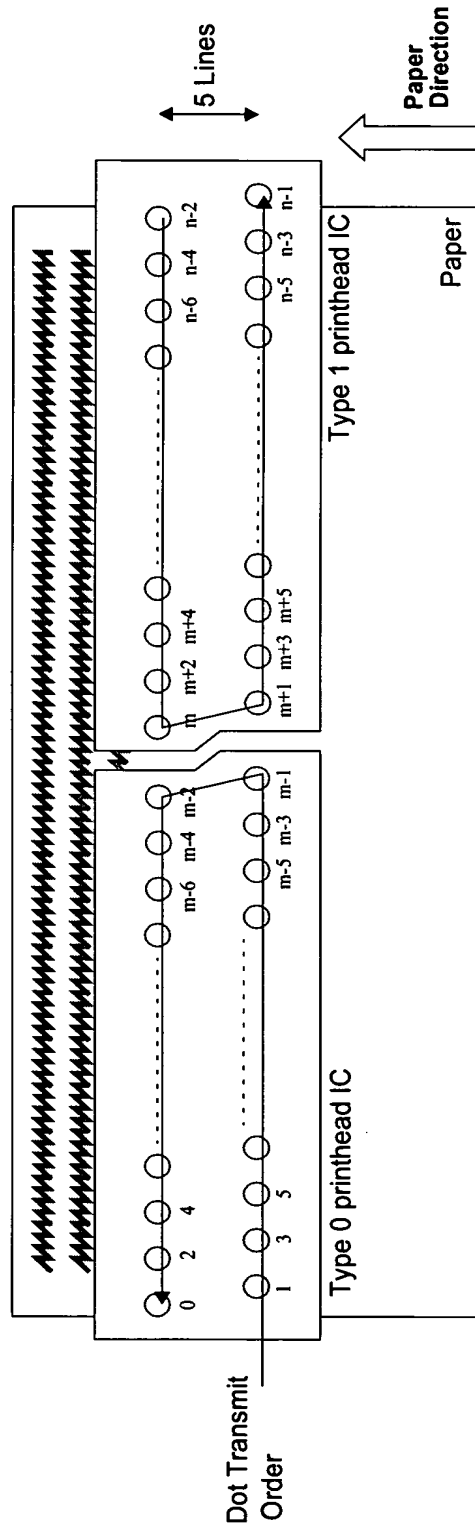


FIG. 280

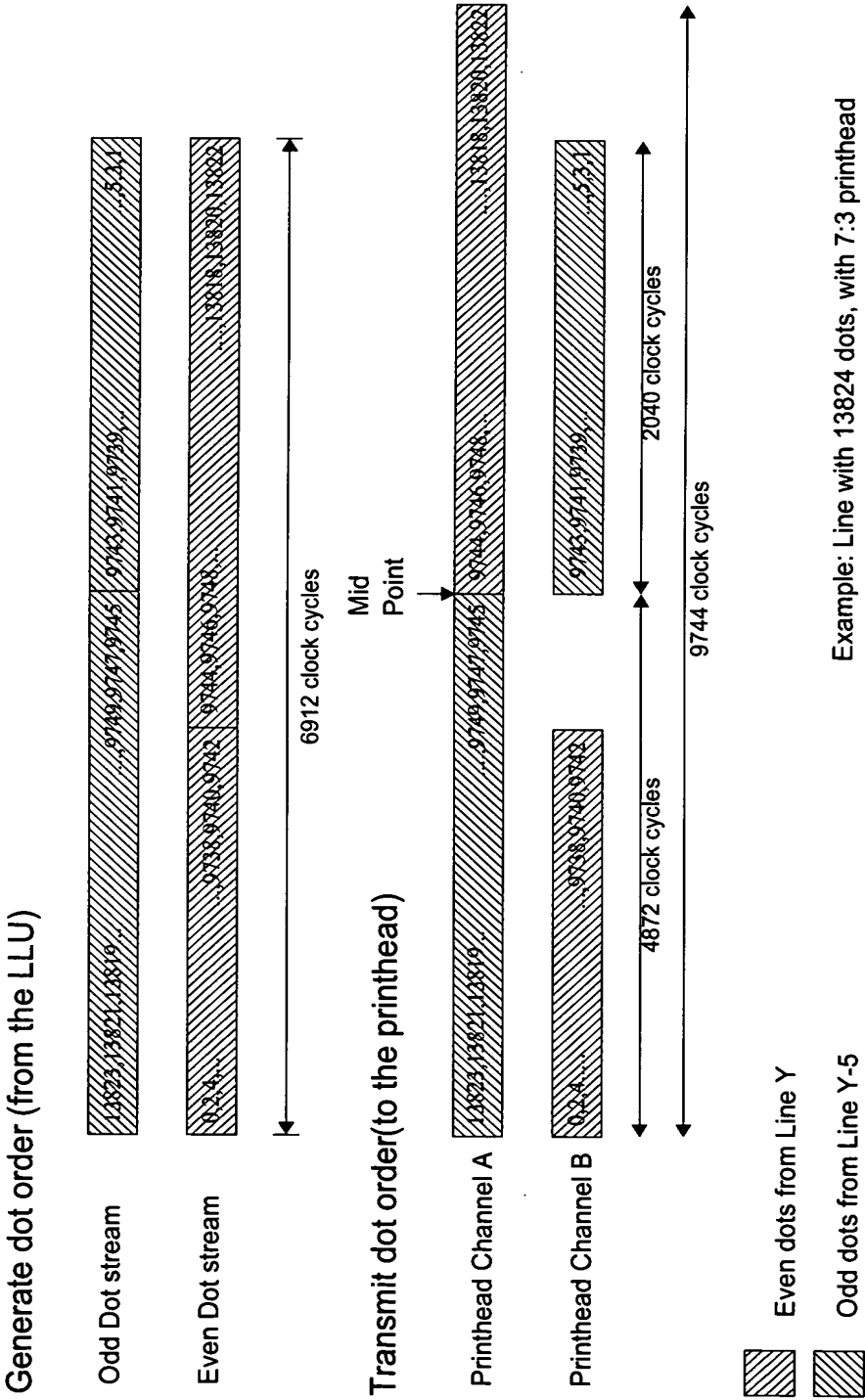


FIG. 281



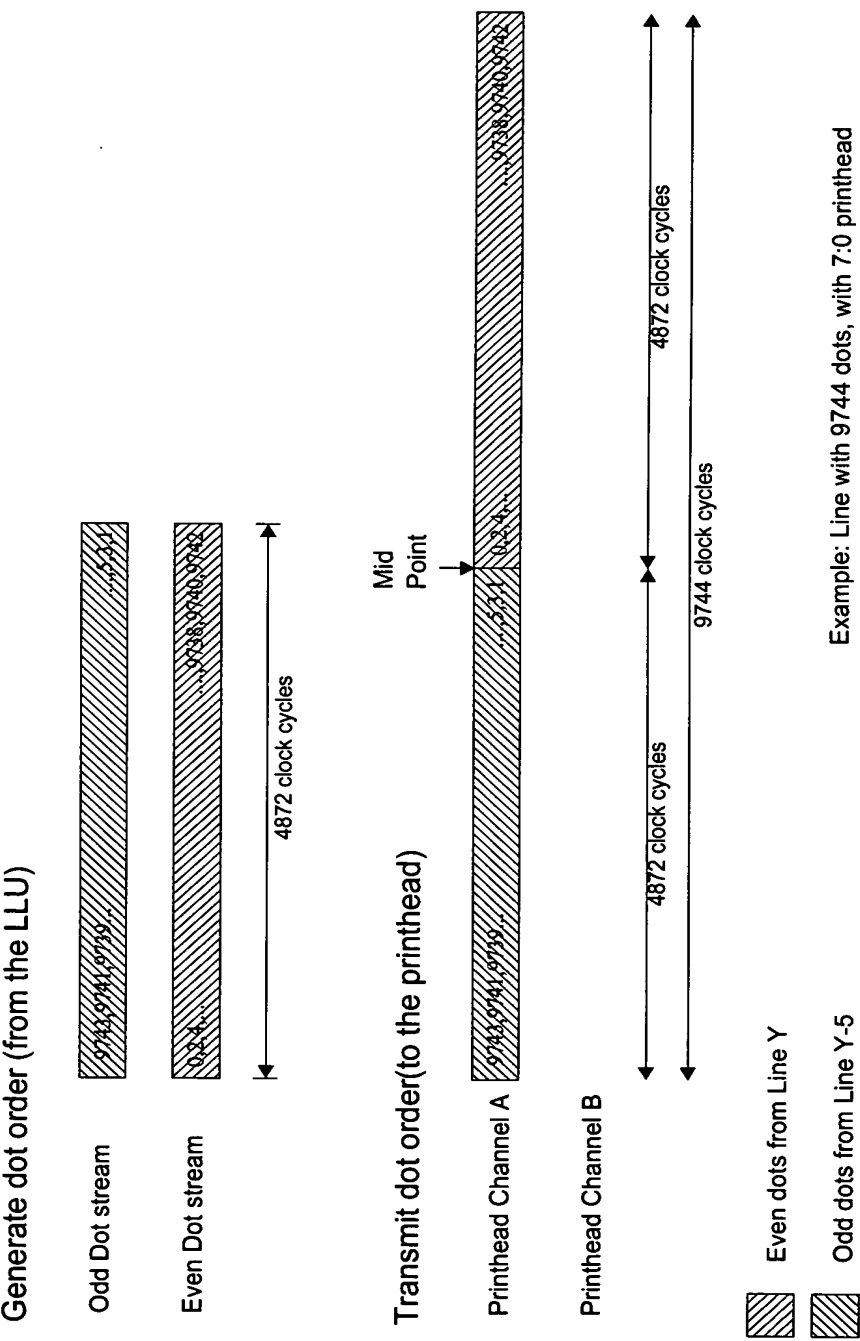


FIG. 282

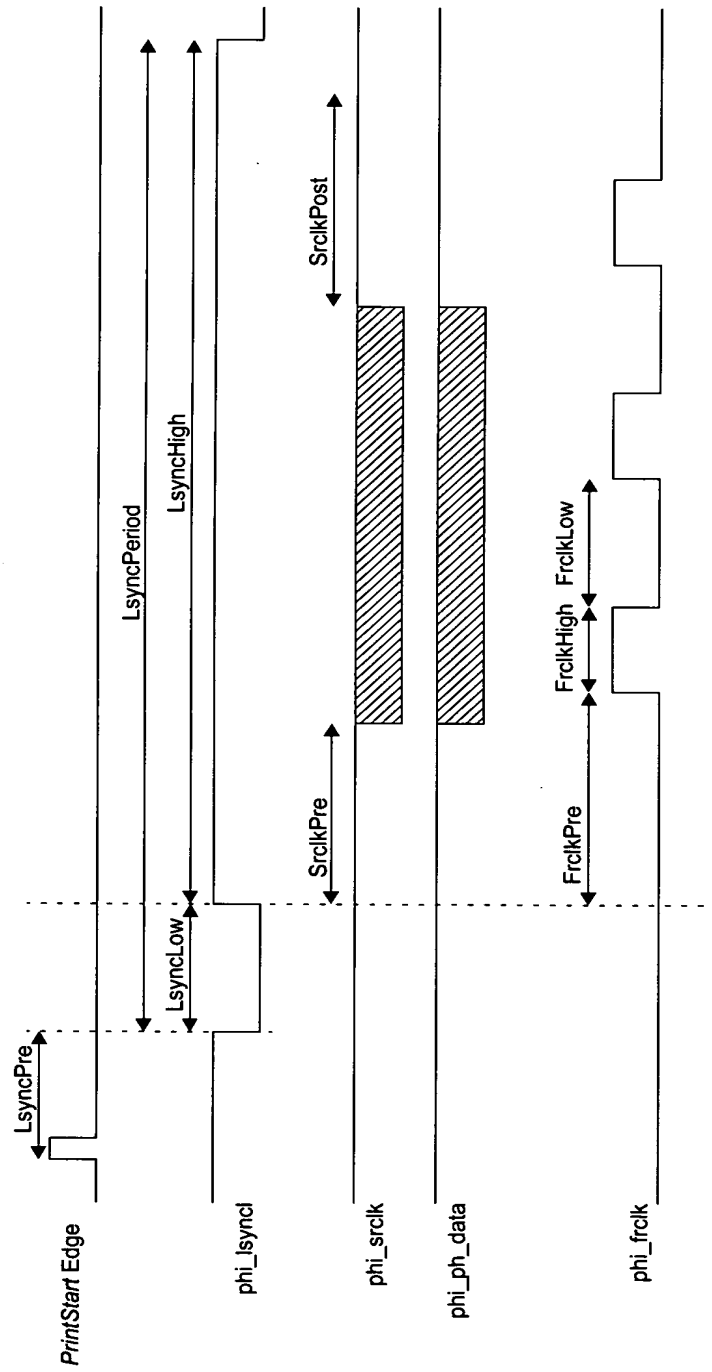


FIG. 283

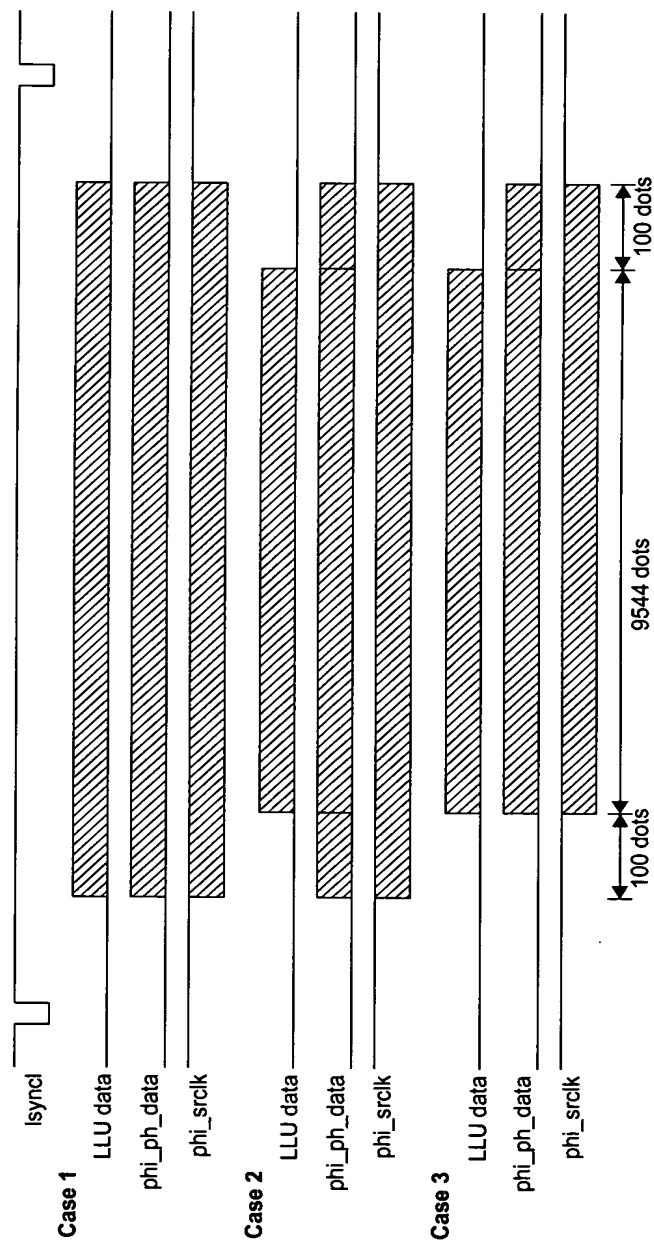
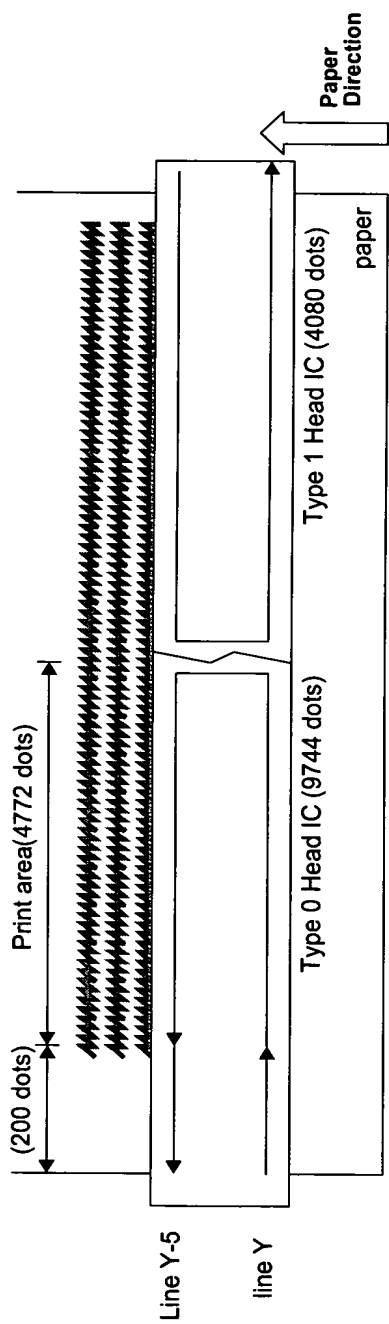


FIG. 284



FIG. 285

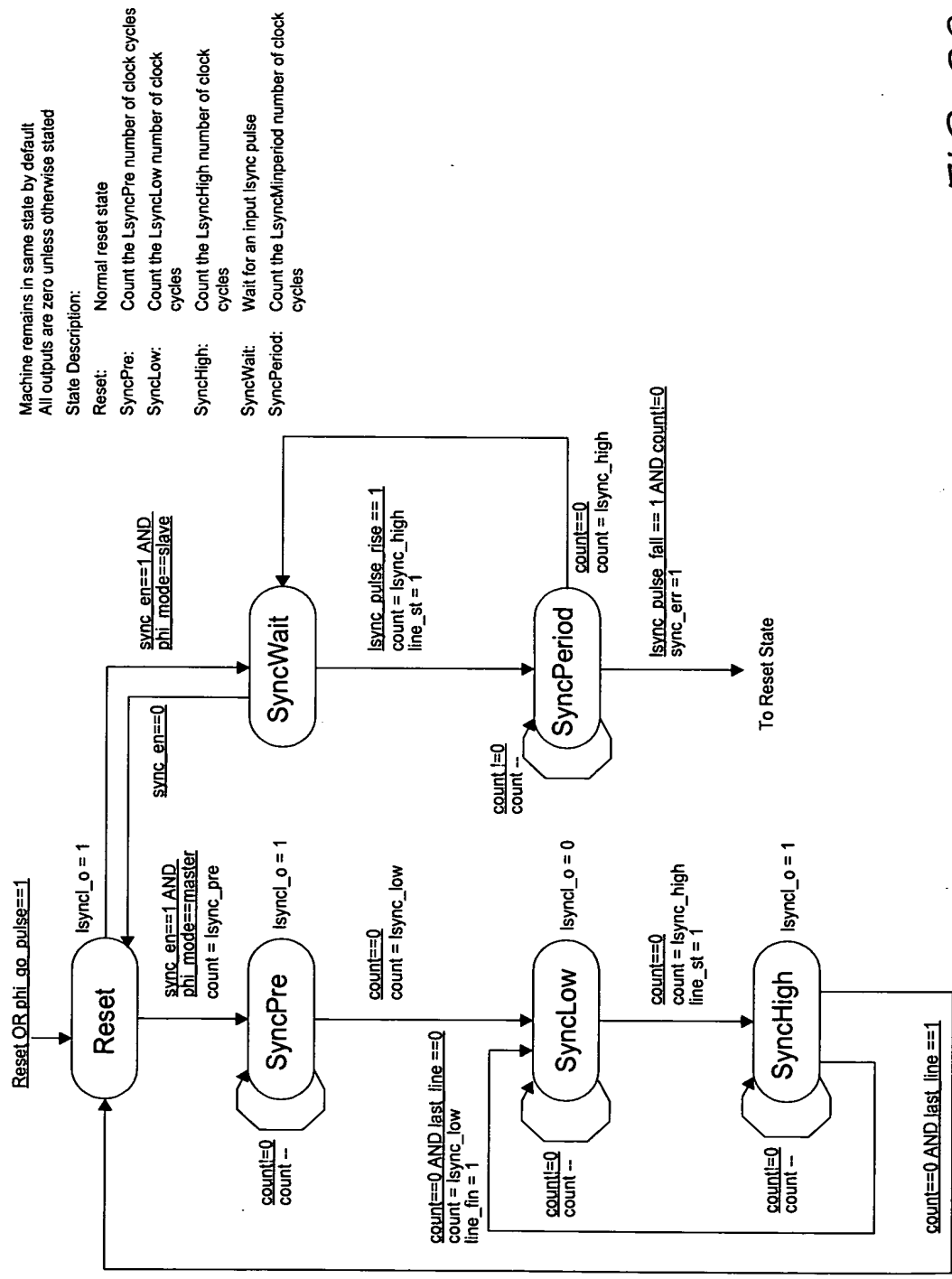


FIG. 286

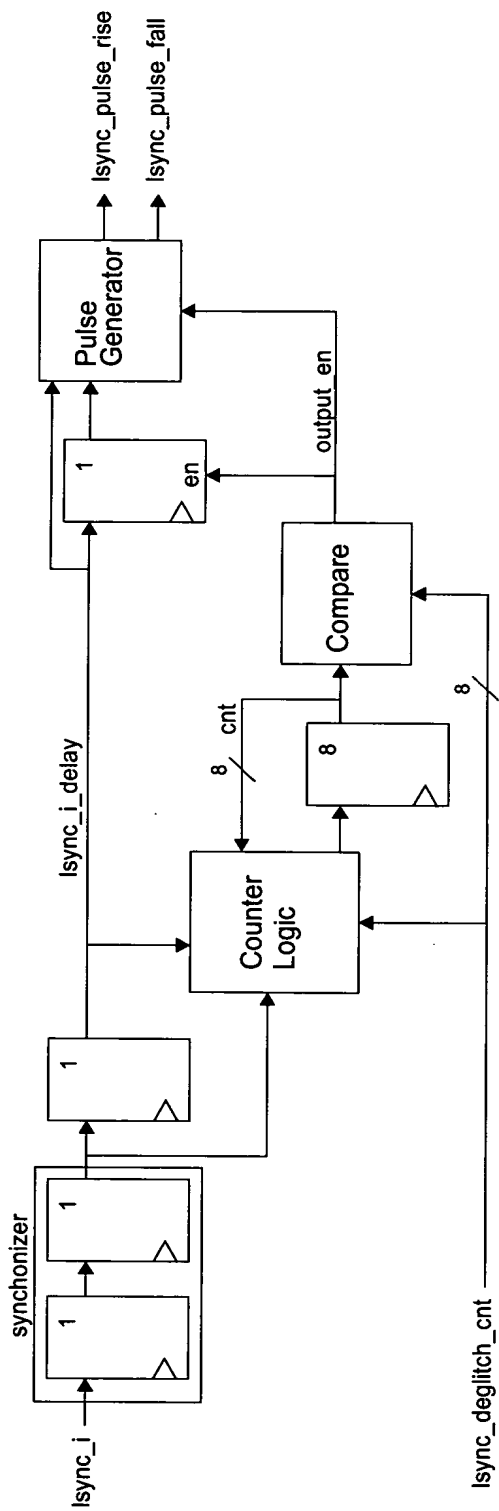
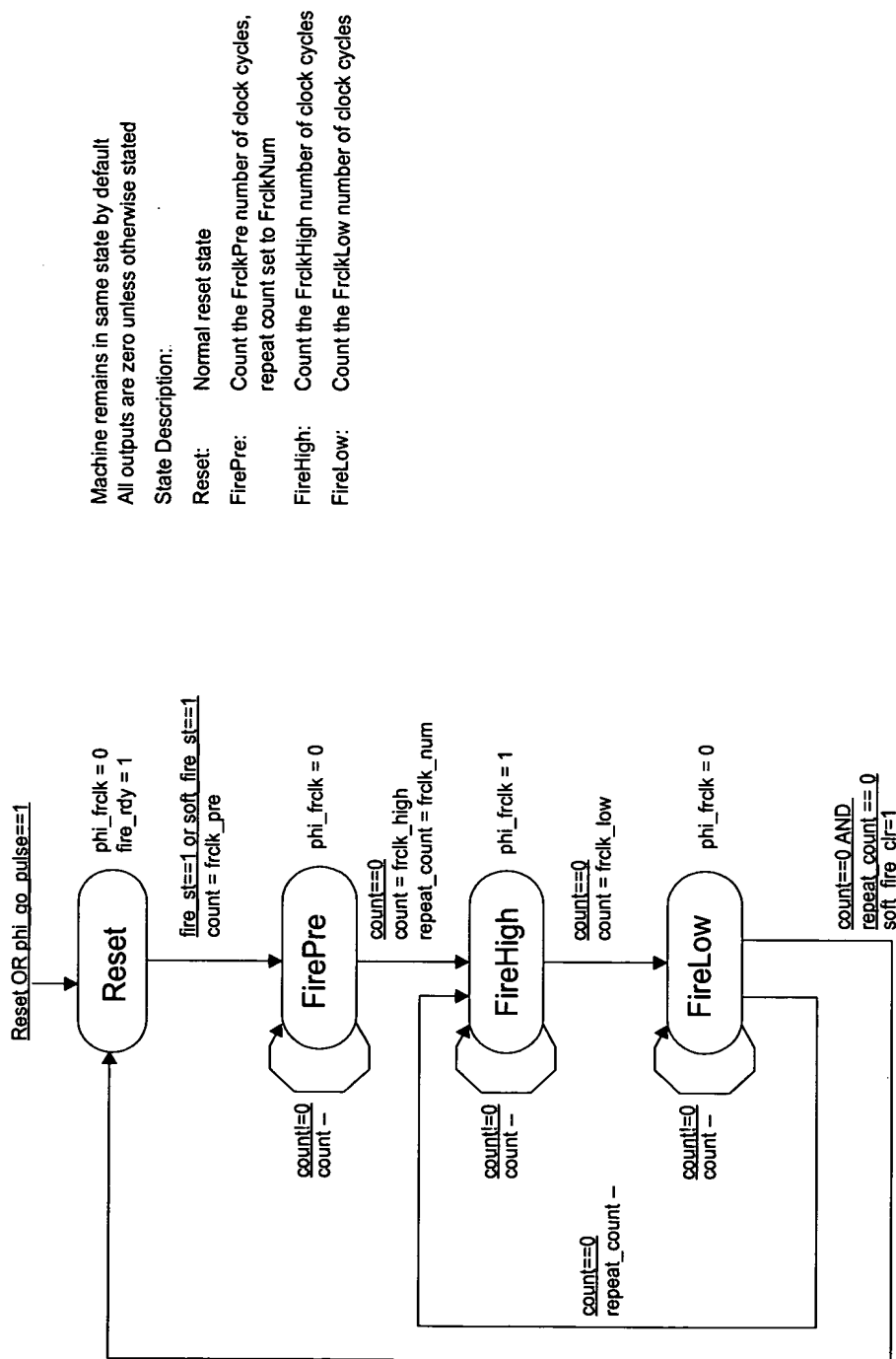


FIG. 287



Machine remains in same state by default  
All outputs are zero unless otherwise stated

State Description:

Reset: Normal reset state

FirePre: Count the FrckPre number of clock cycles,  
repeat count set to FrckNum

FireHigh: Count the FrckHigh number of clock cycles

FireLow: Count the FrckLow number of clock cycles

FIG. 288

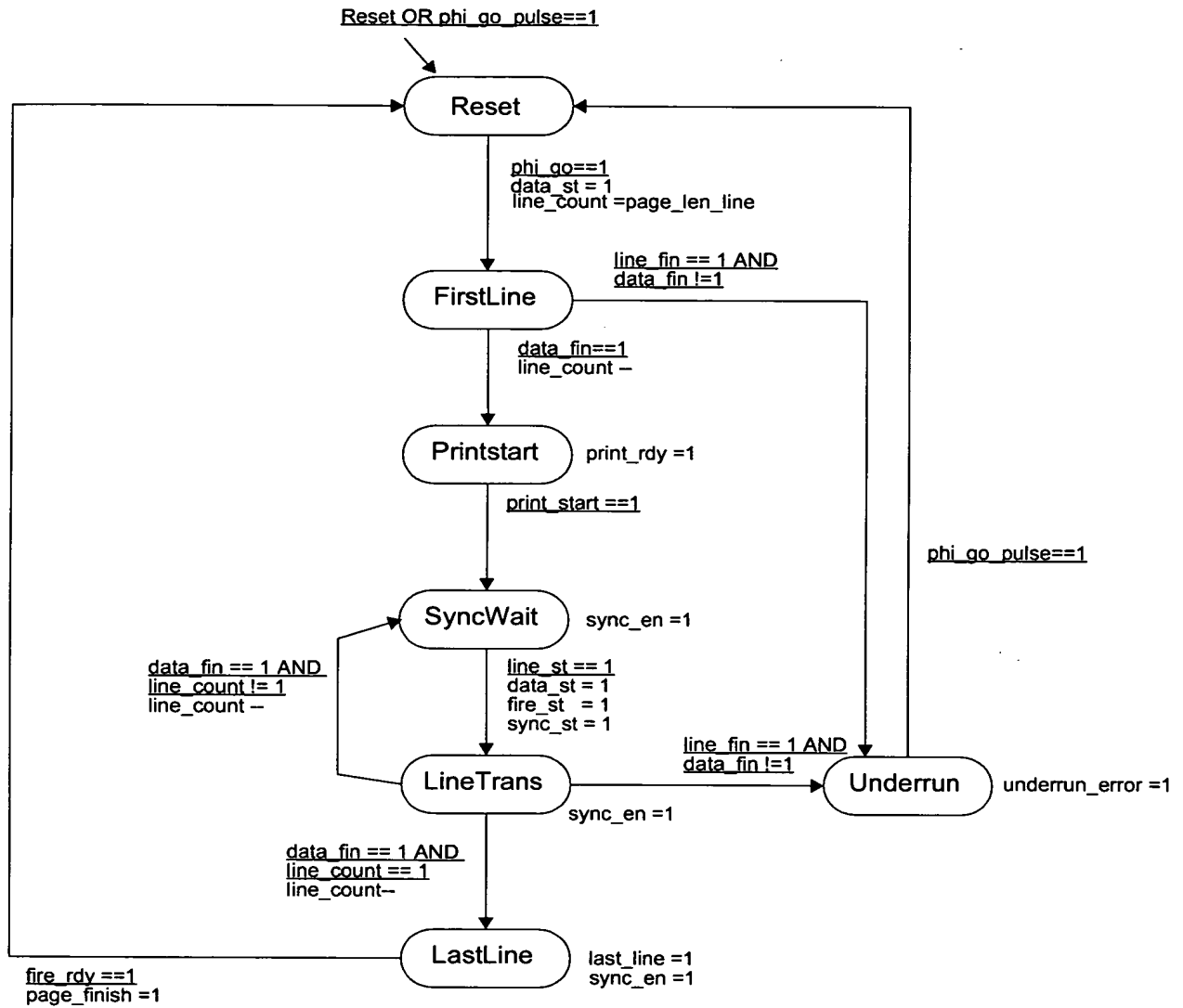


FIG. 289



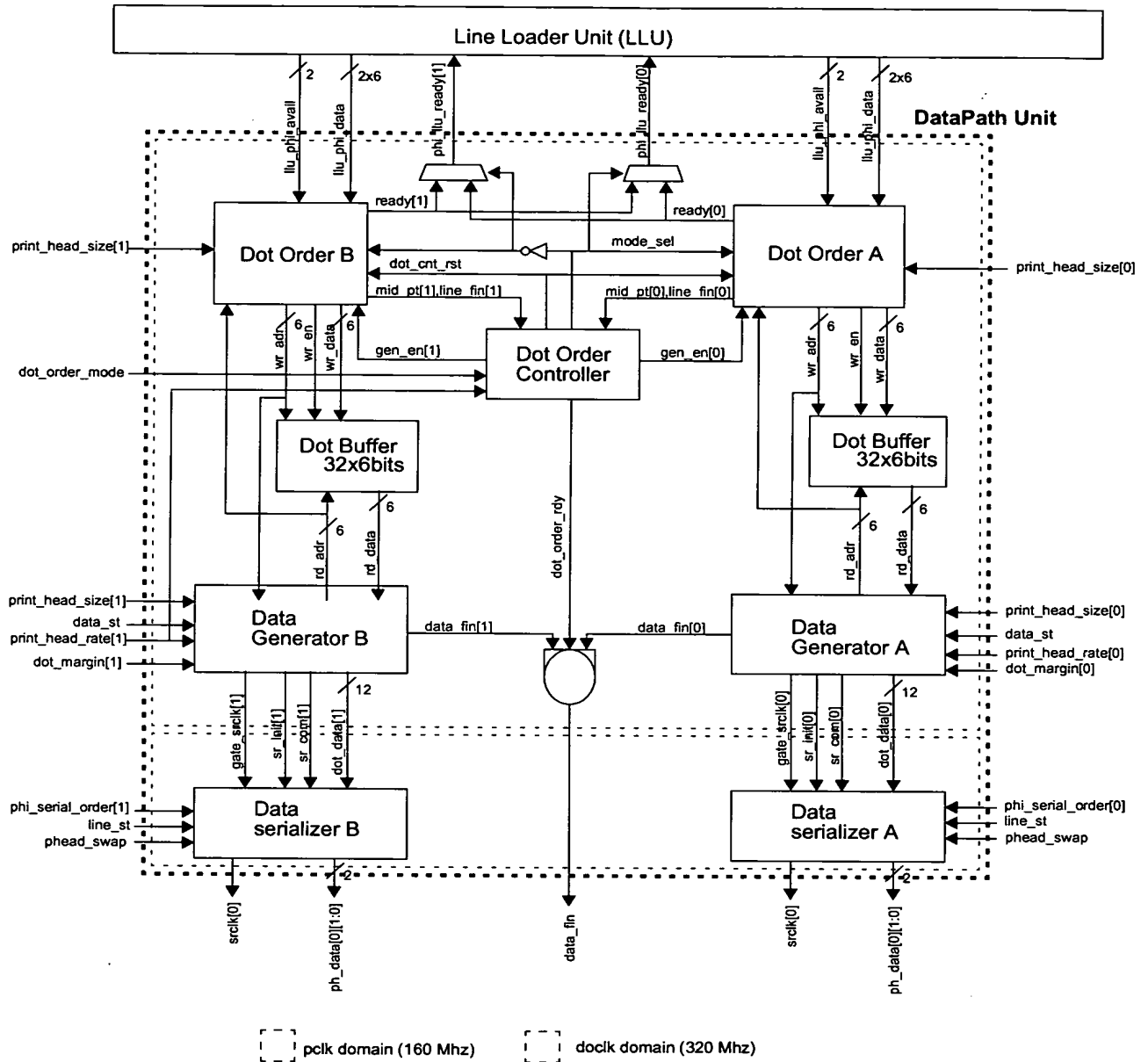


FIG. 290

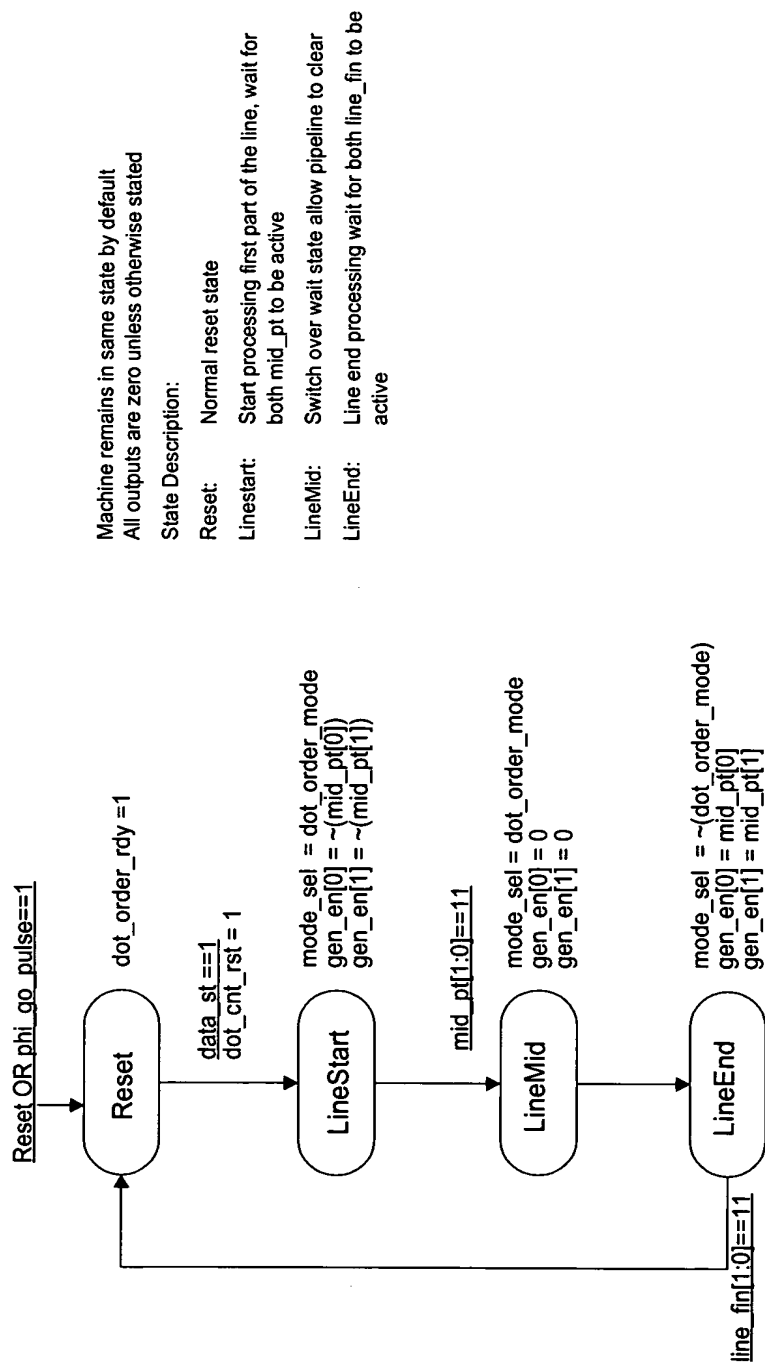


FIG. 291

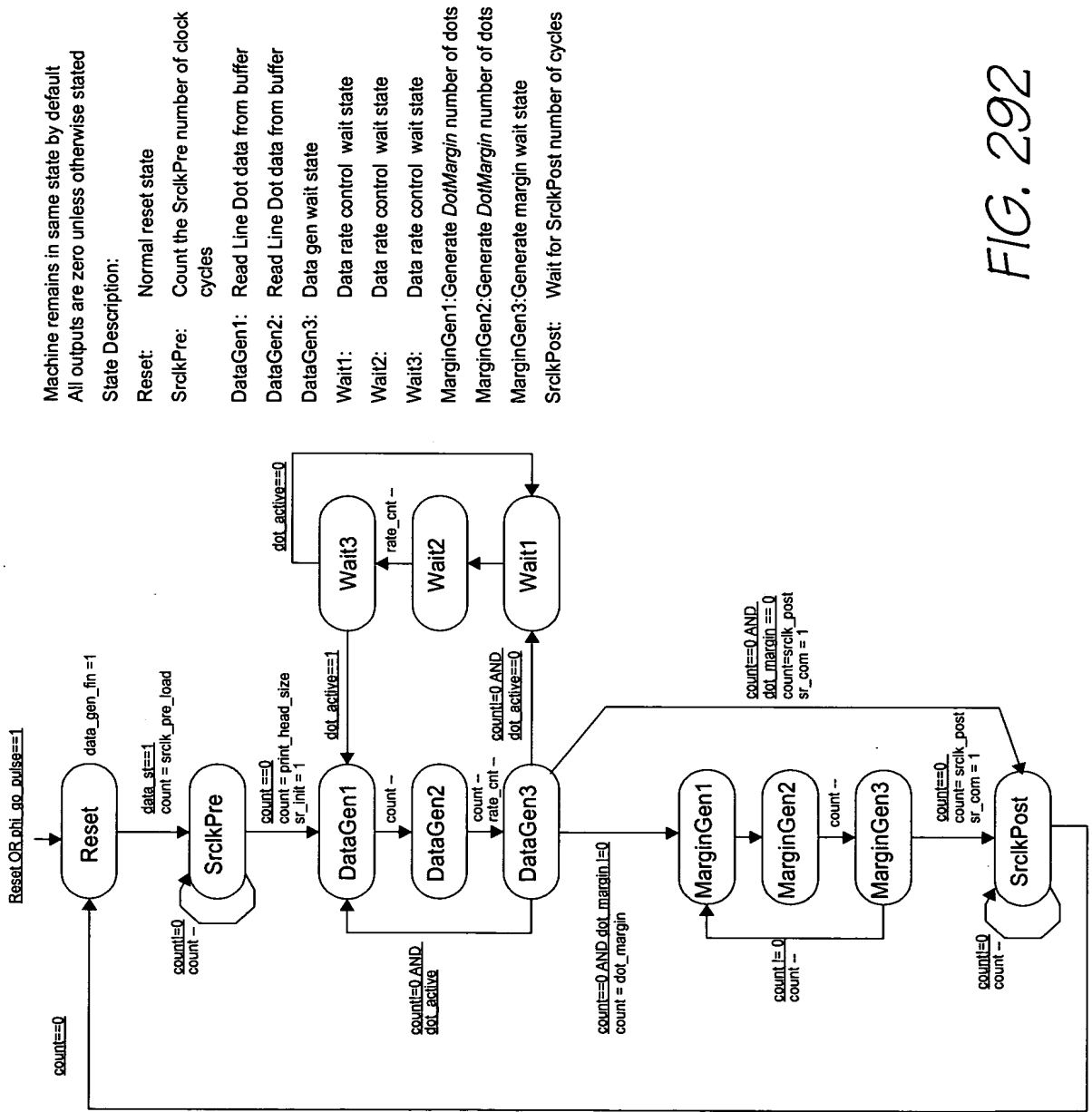


FIG. 292

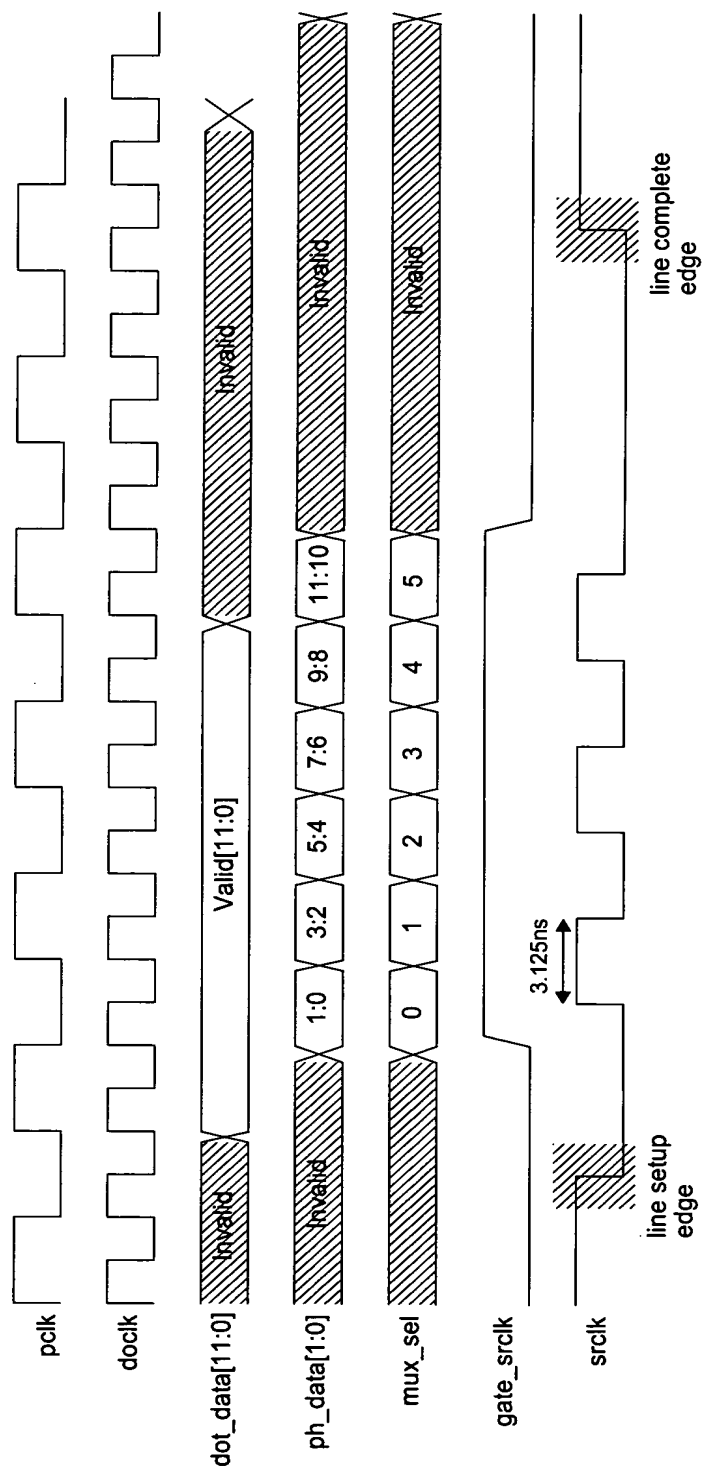


FIG. 293

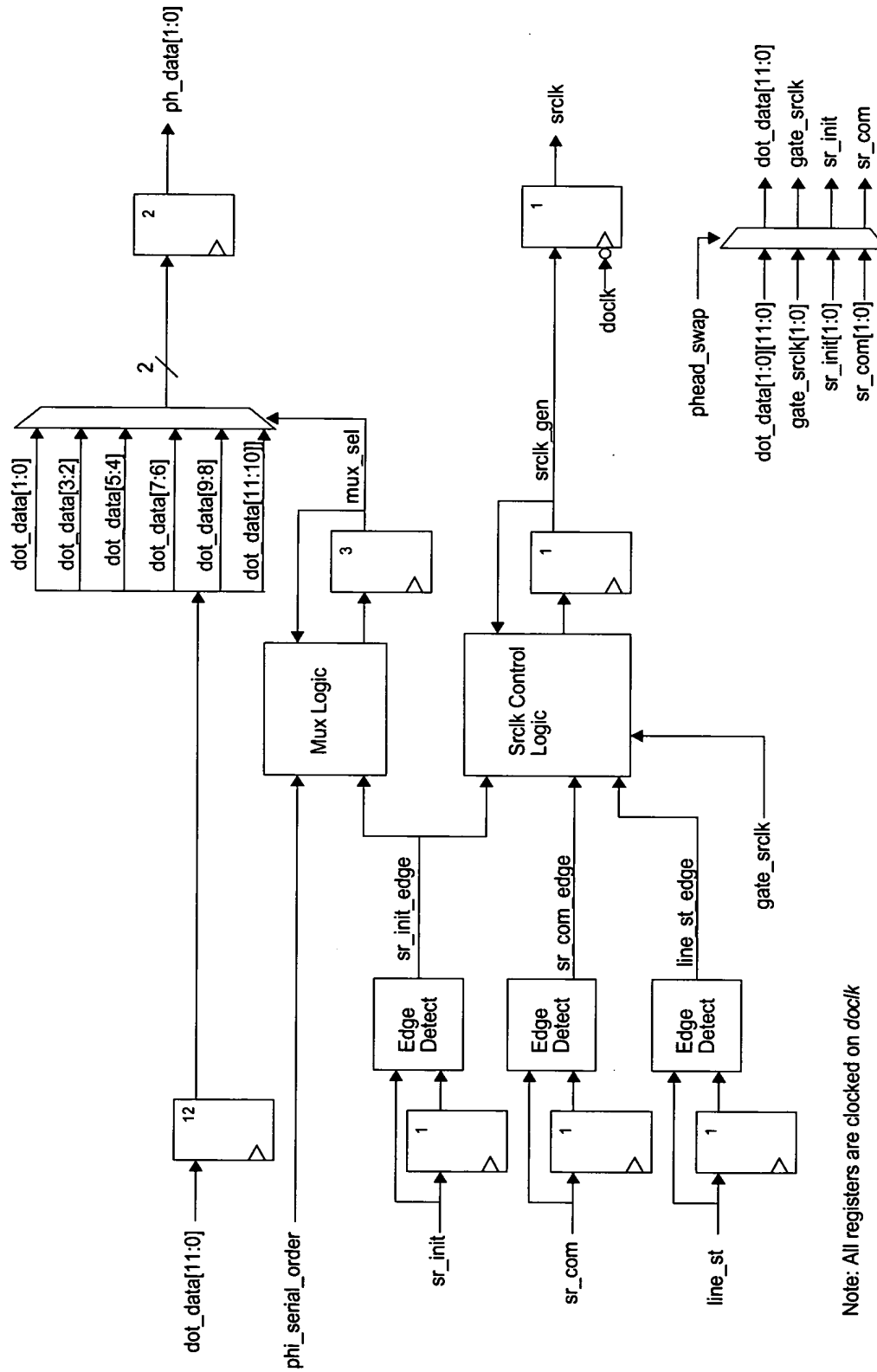


FIG. 294

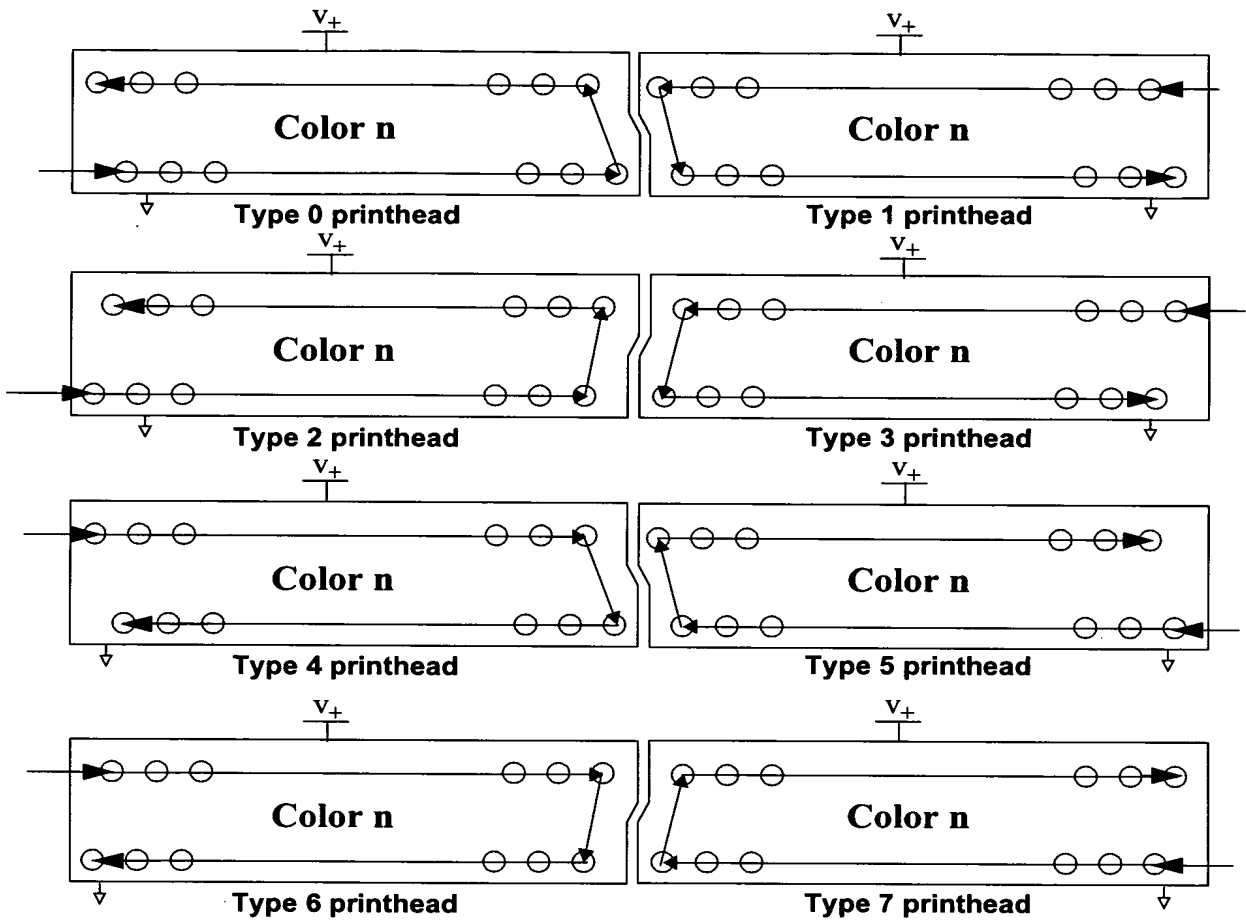


FIG. 295

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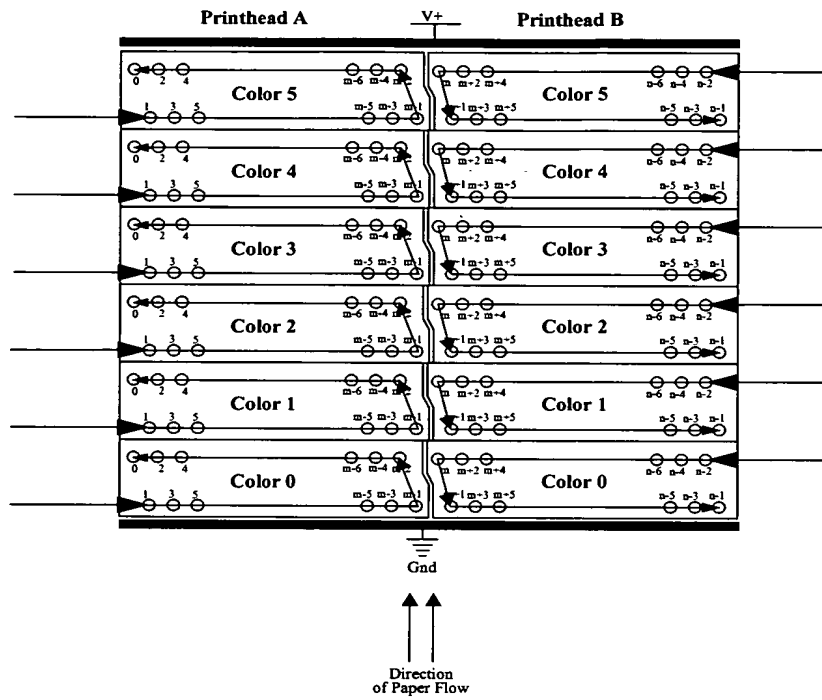


FIG. 296

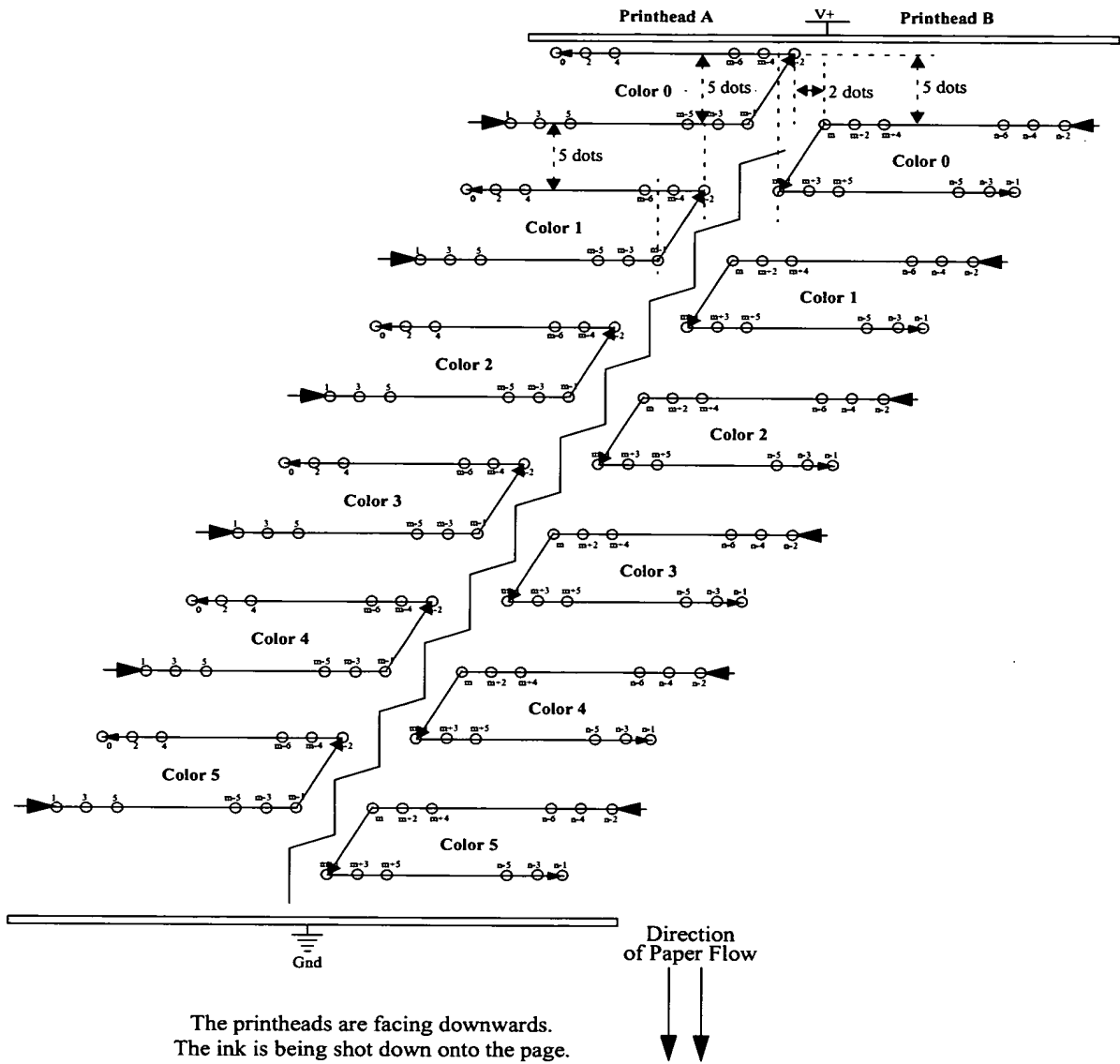
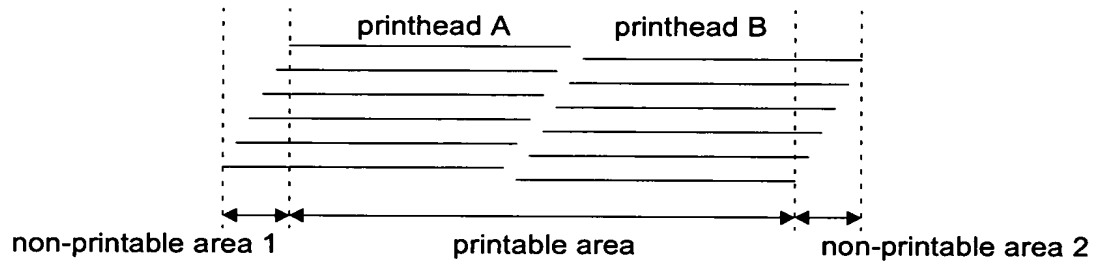


FIG. 297





*FIG. 298*

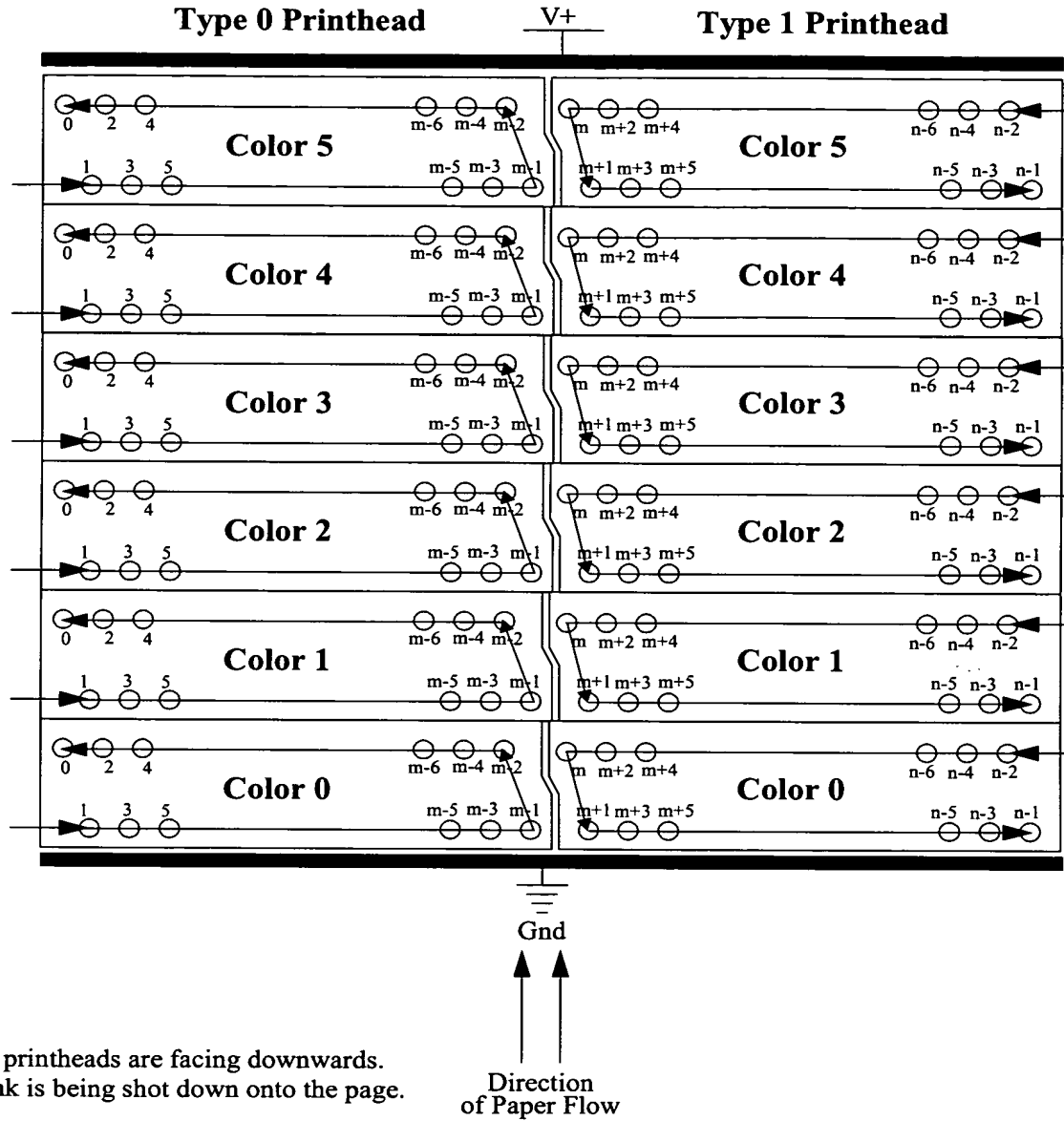


FIG. 299

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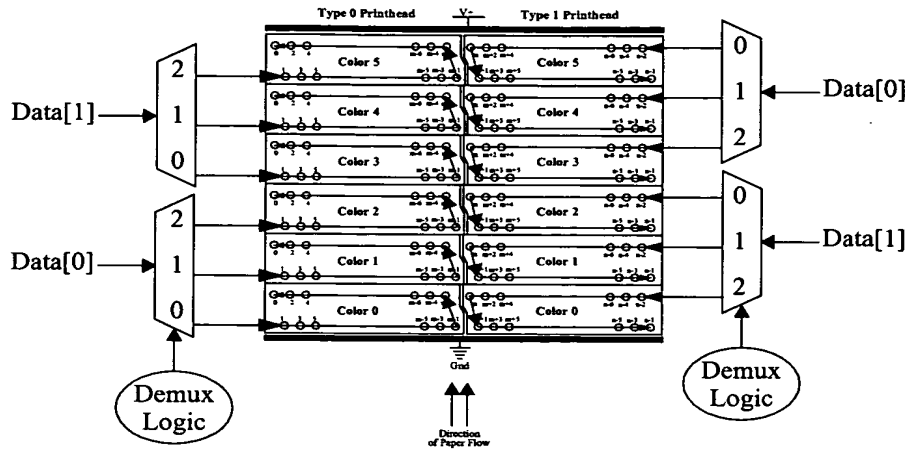


FIG. 300

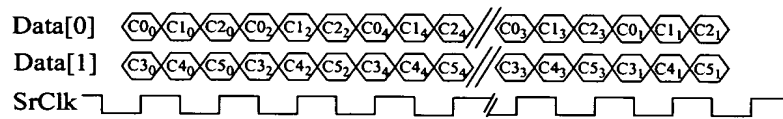


FIG. 301

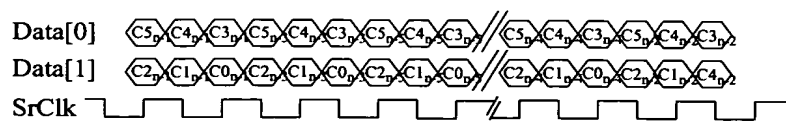


FIG. 302

The printheads are facing downwards.  
The ink is being shot down onto the page.

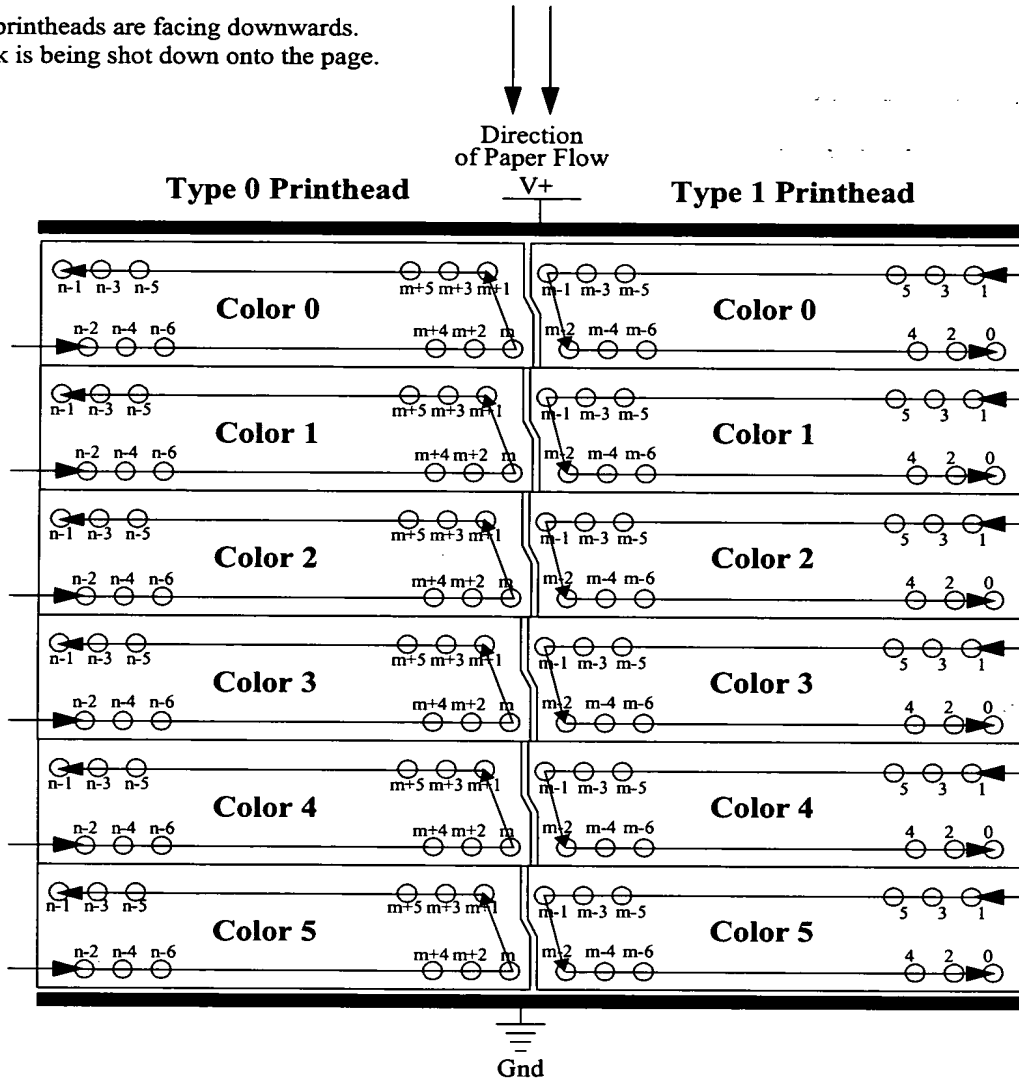


FIG. 303

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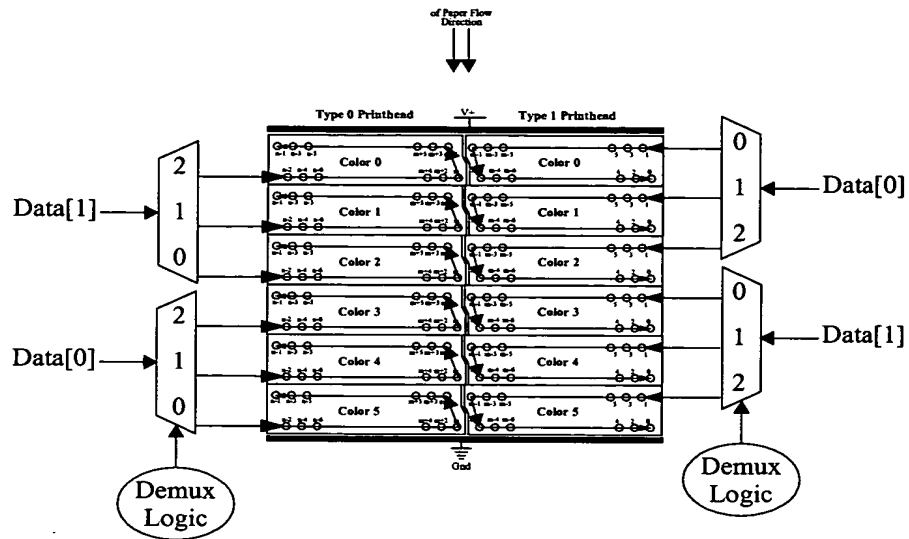


FIG. 304

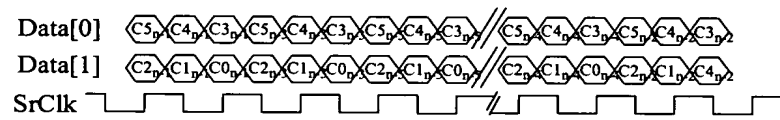


FIG. 305

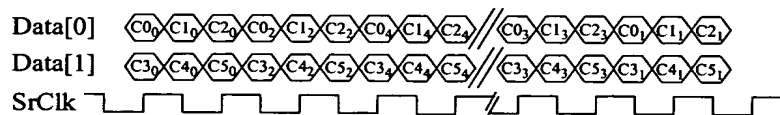


FIG. 306

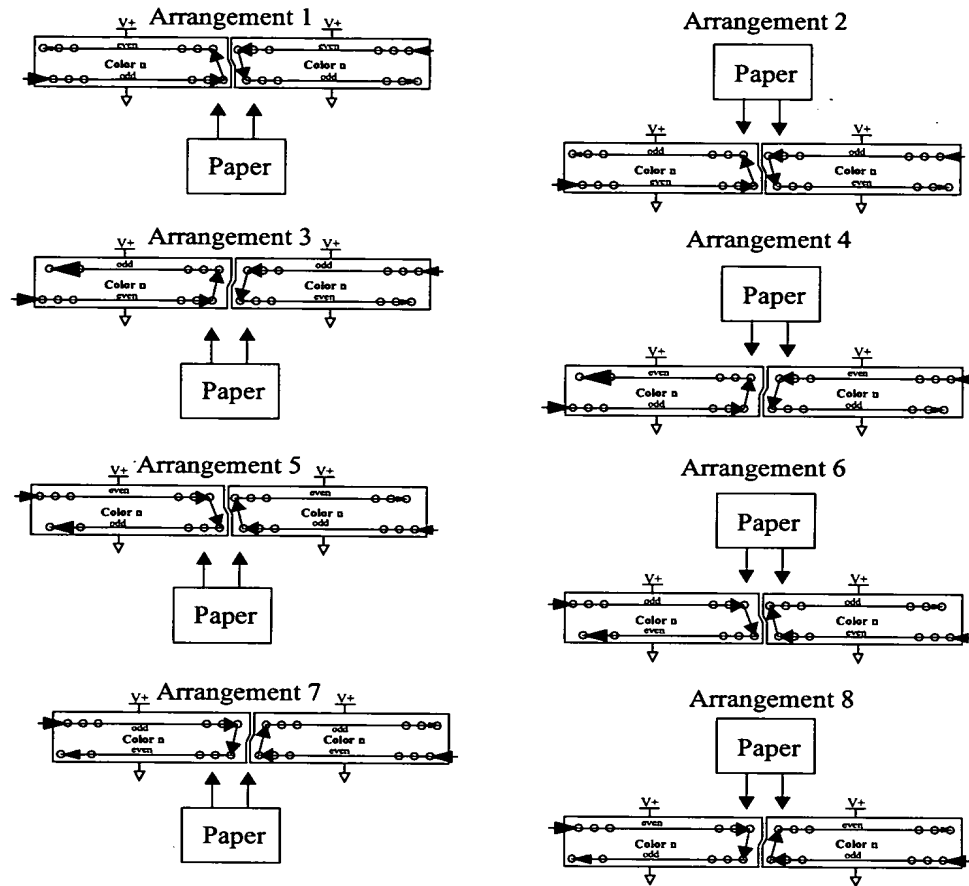


FIG. 307

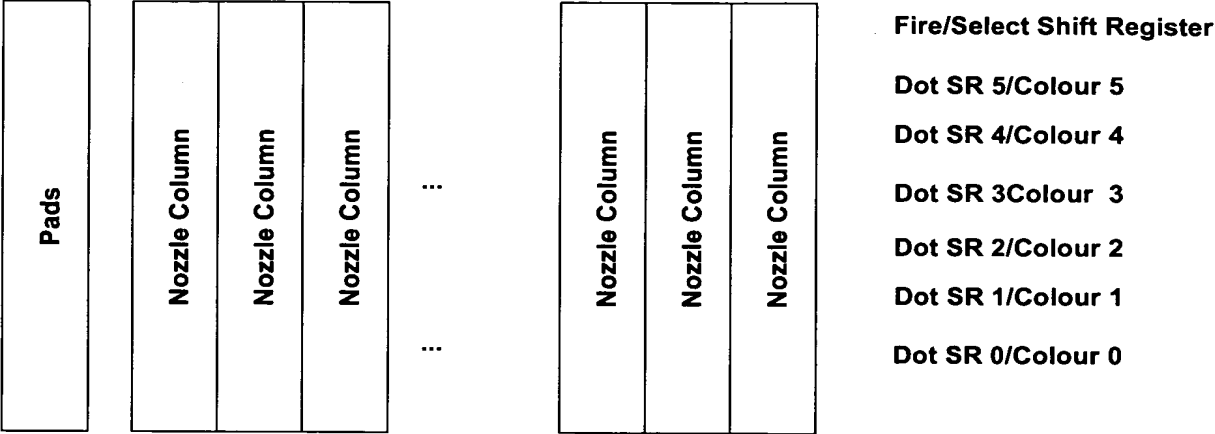


FIG. 308

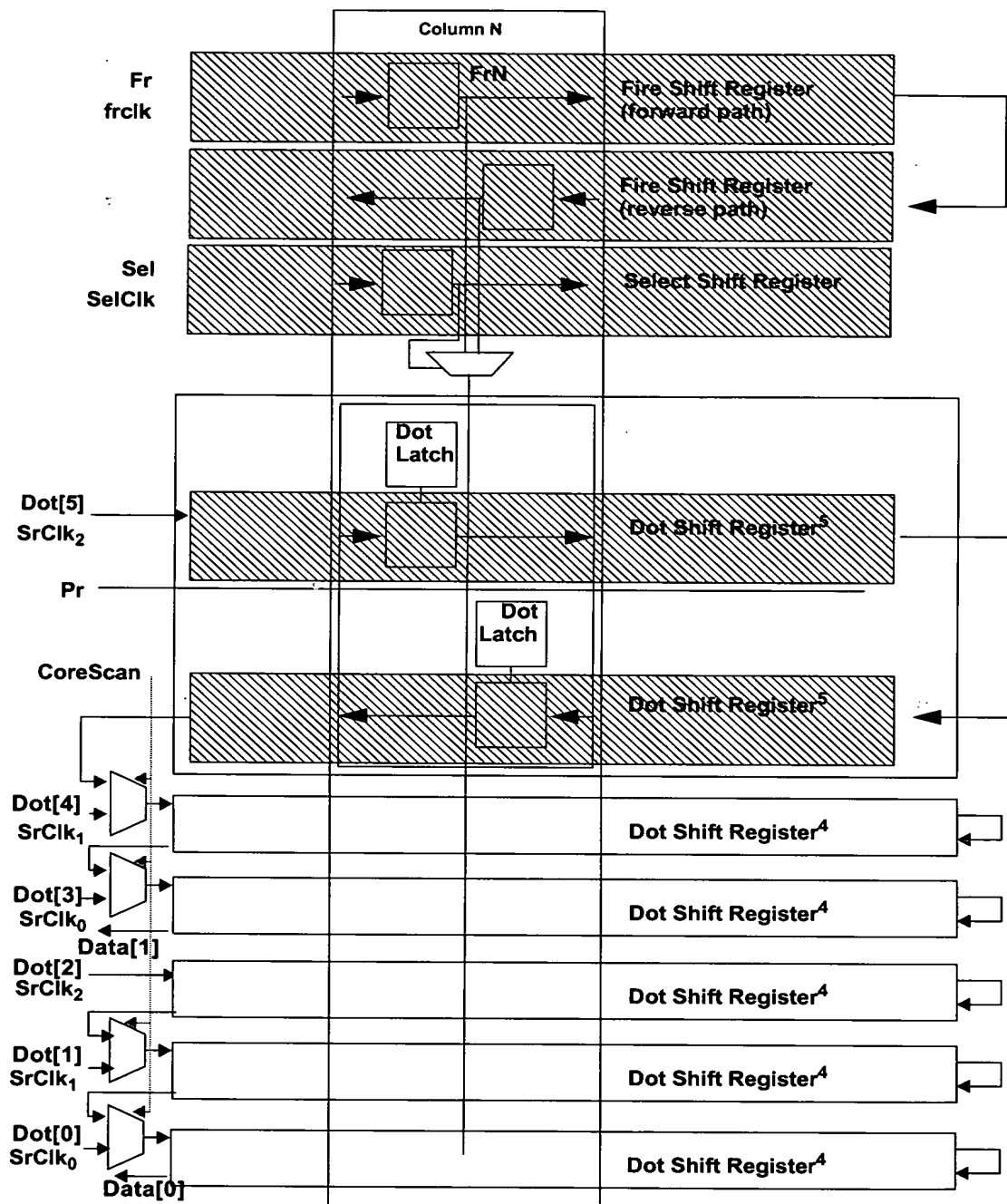


FIG. 309



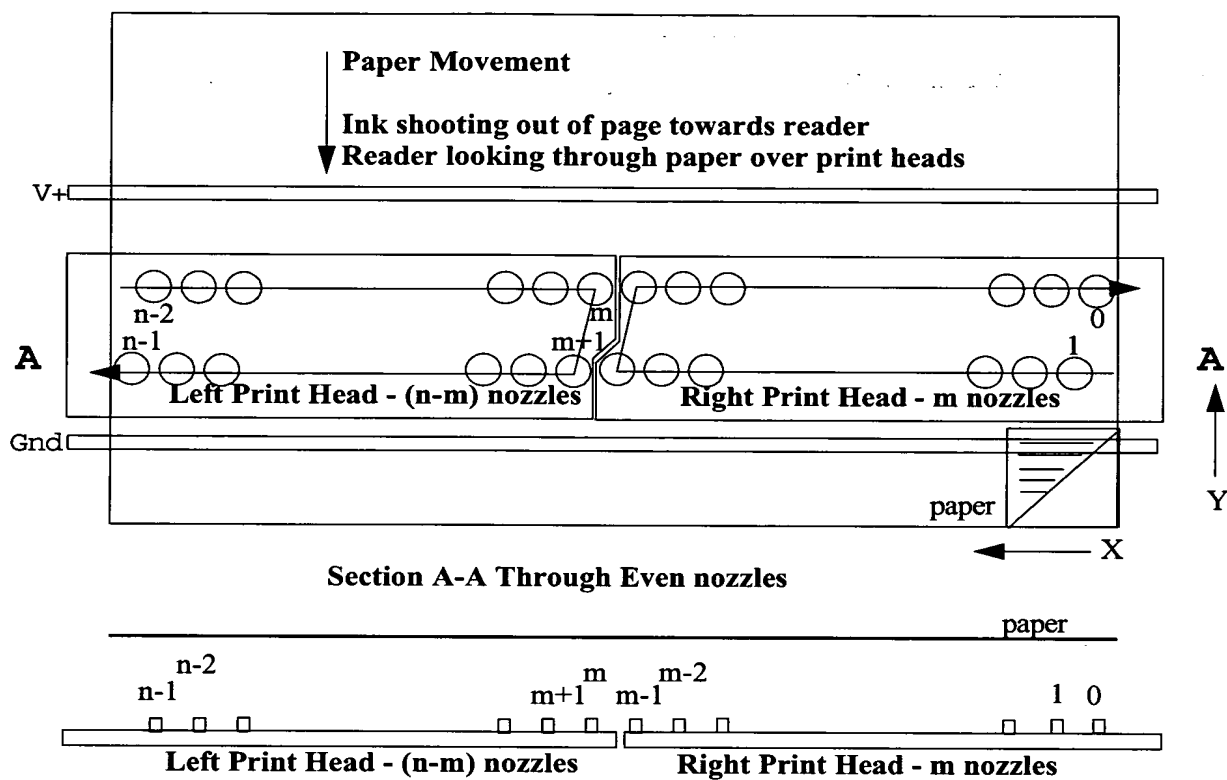


FIG. 310

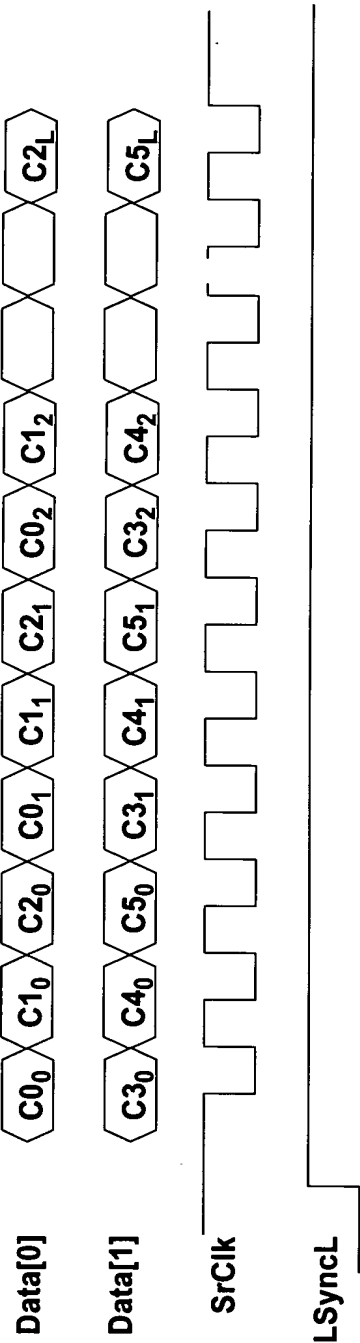
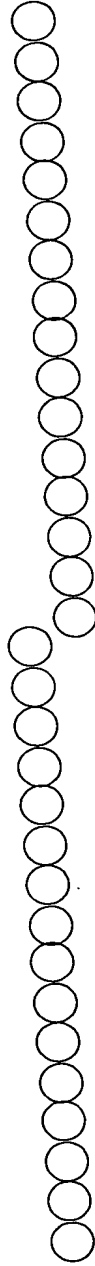
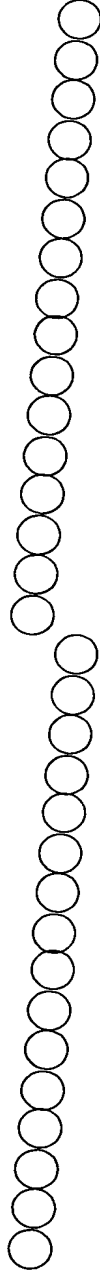


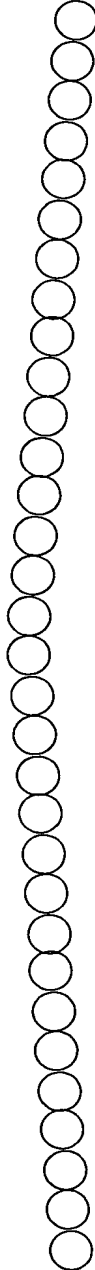
FIG. 311



a) Printing every  $n^{\text{th}}$  dot with all zero's in the fire select shift register



b) Printing every  $n^{\text{th}}$  dot with all one's in the fire select shift register



c) Printing every  $n^{\text{th}}$  dot with  $n$  zero's then  $n$  one's in the fire select shift registers

FIG. 312

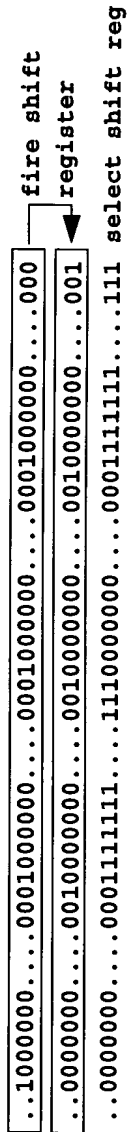


FIG. 313

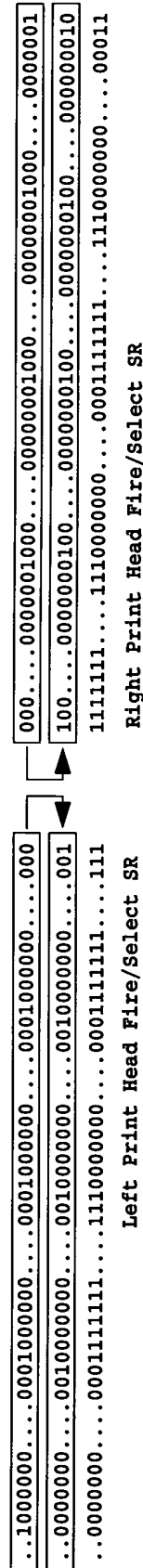


FIG. 314

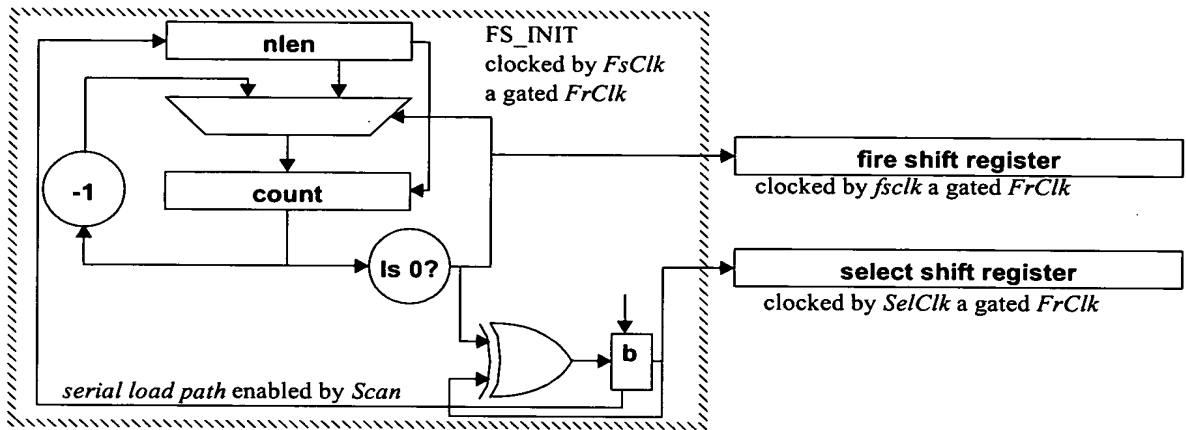


FIG. 315

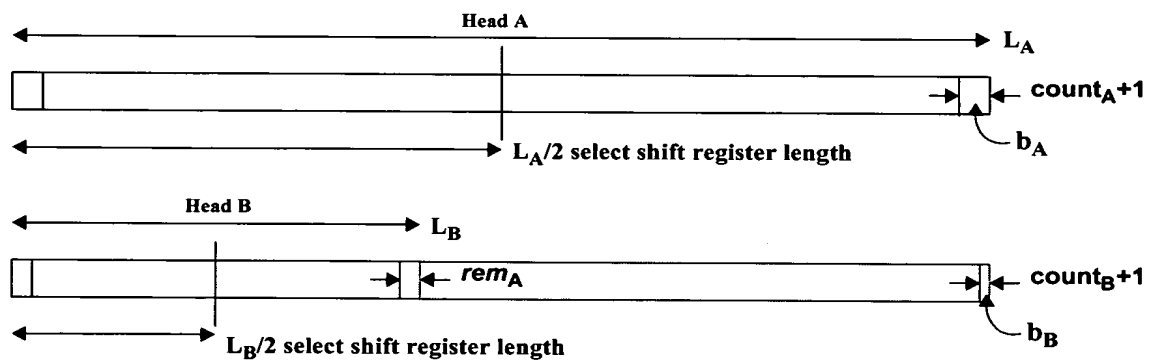


FIG. 316

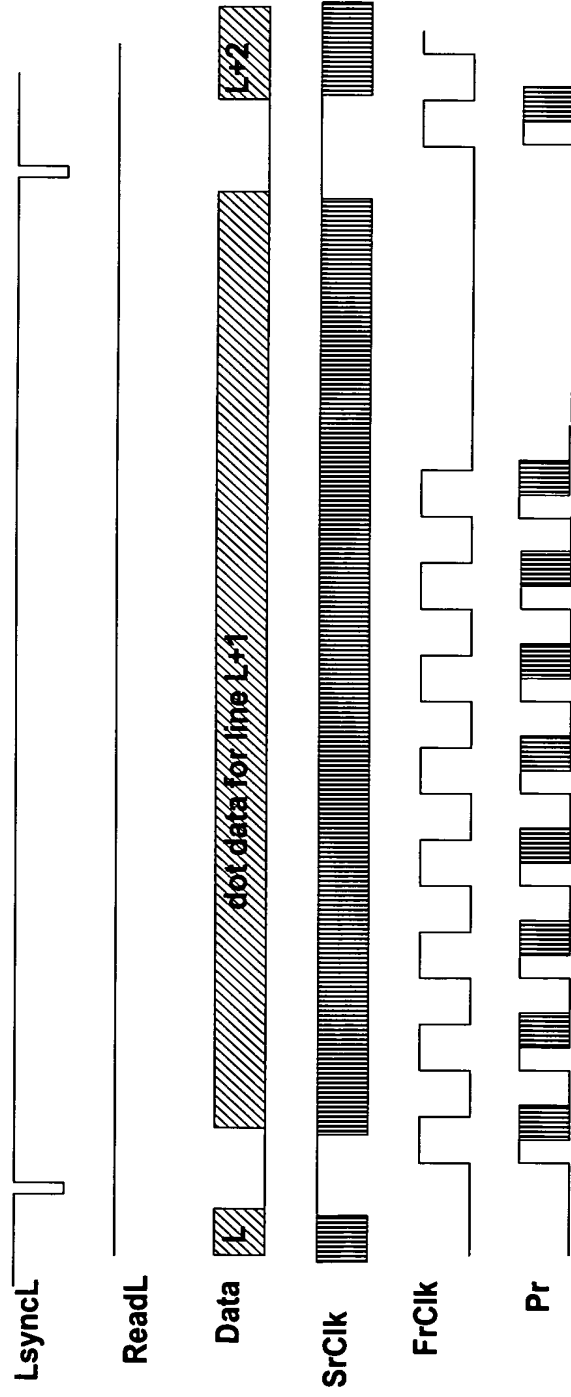


FIG. 317

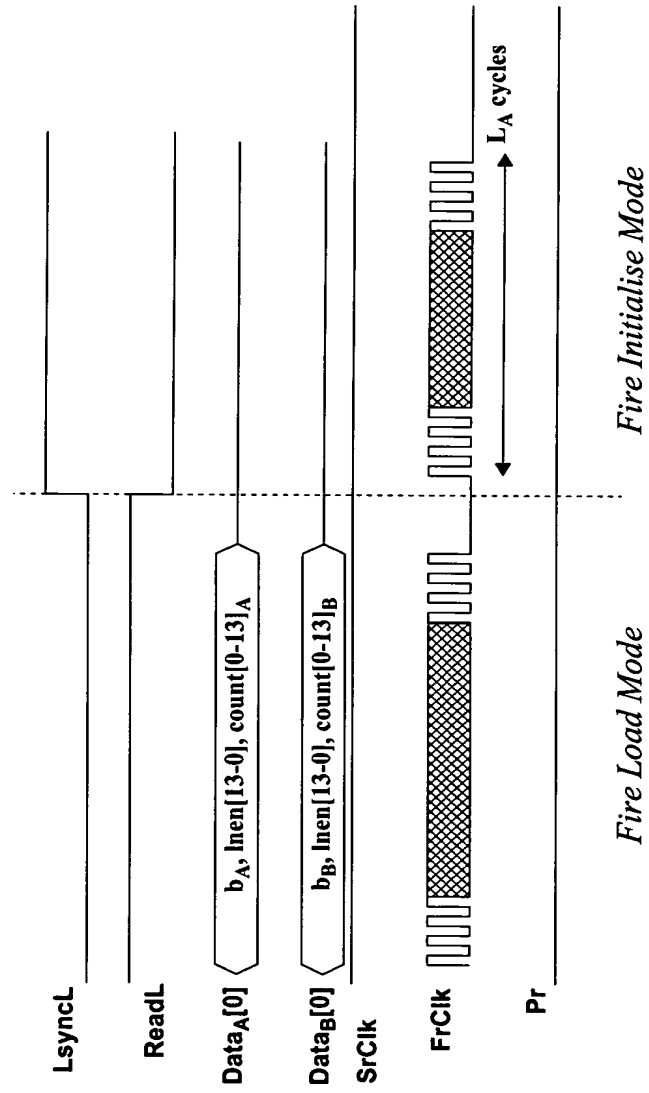


FIG. 318

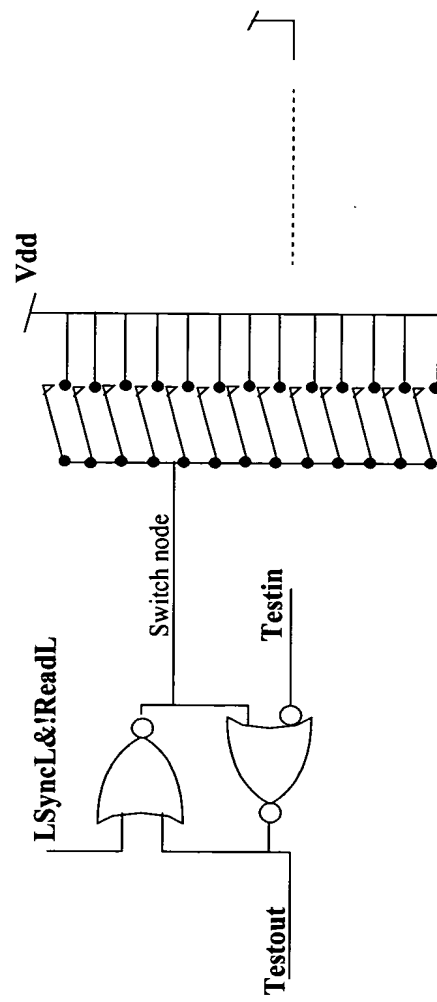


FIG. 319



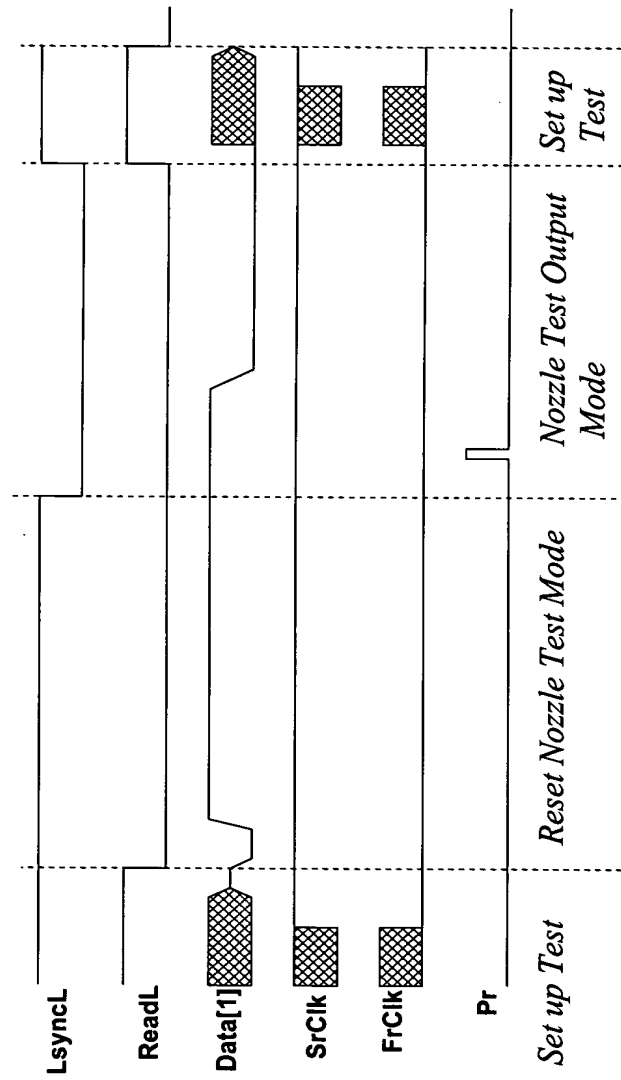


FIG. 320

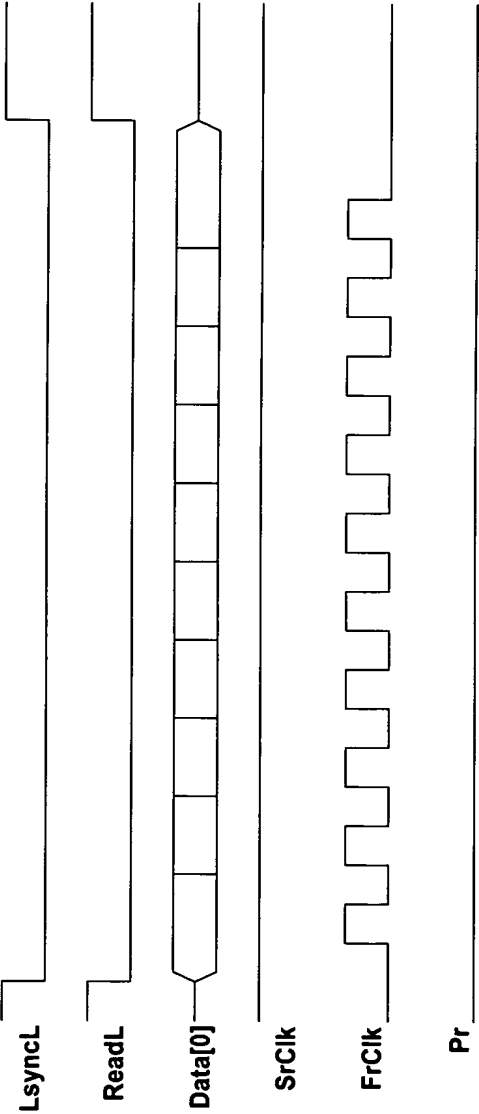


FIG. 321

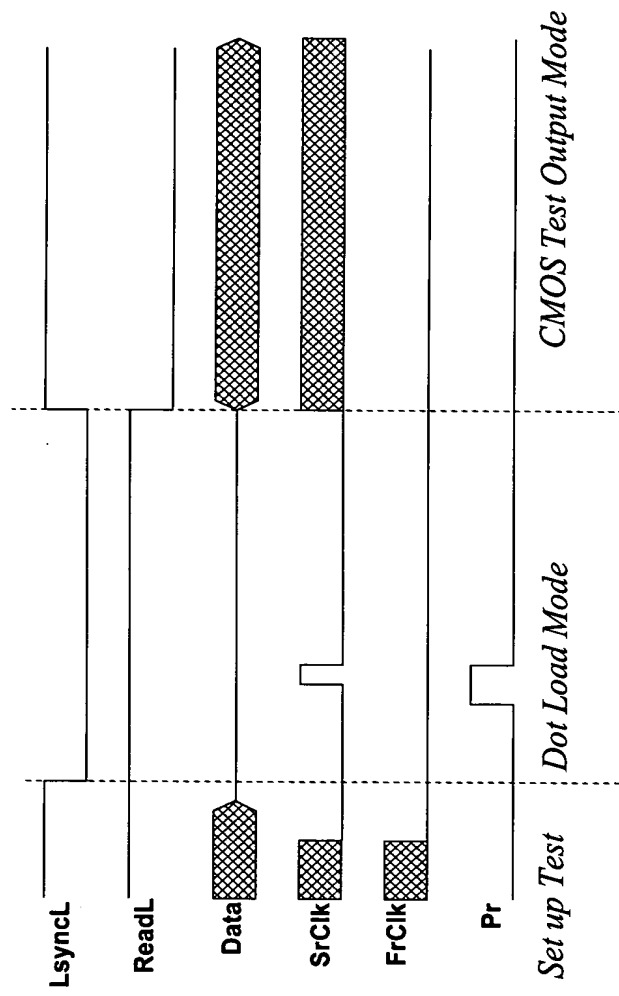


FIG. 322

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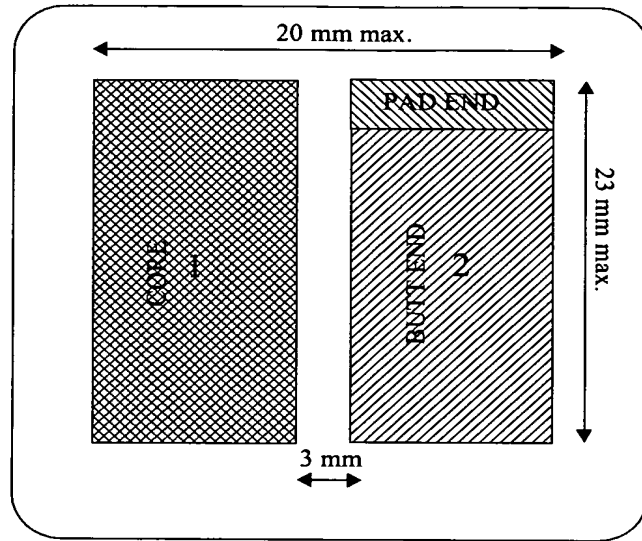


FIG. 323

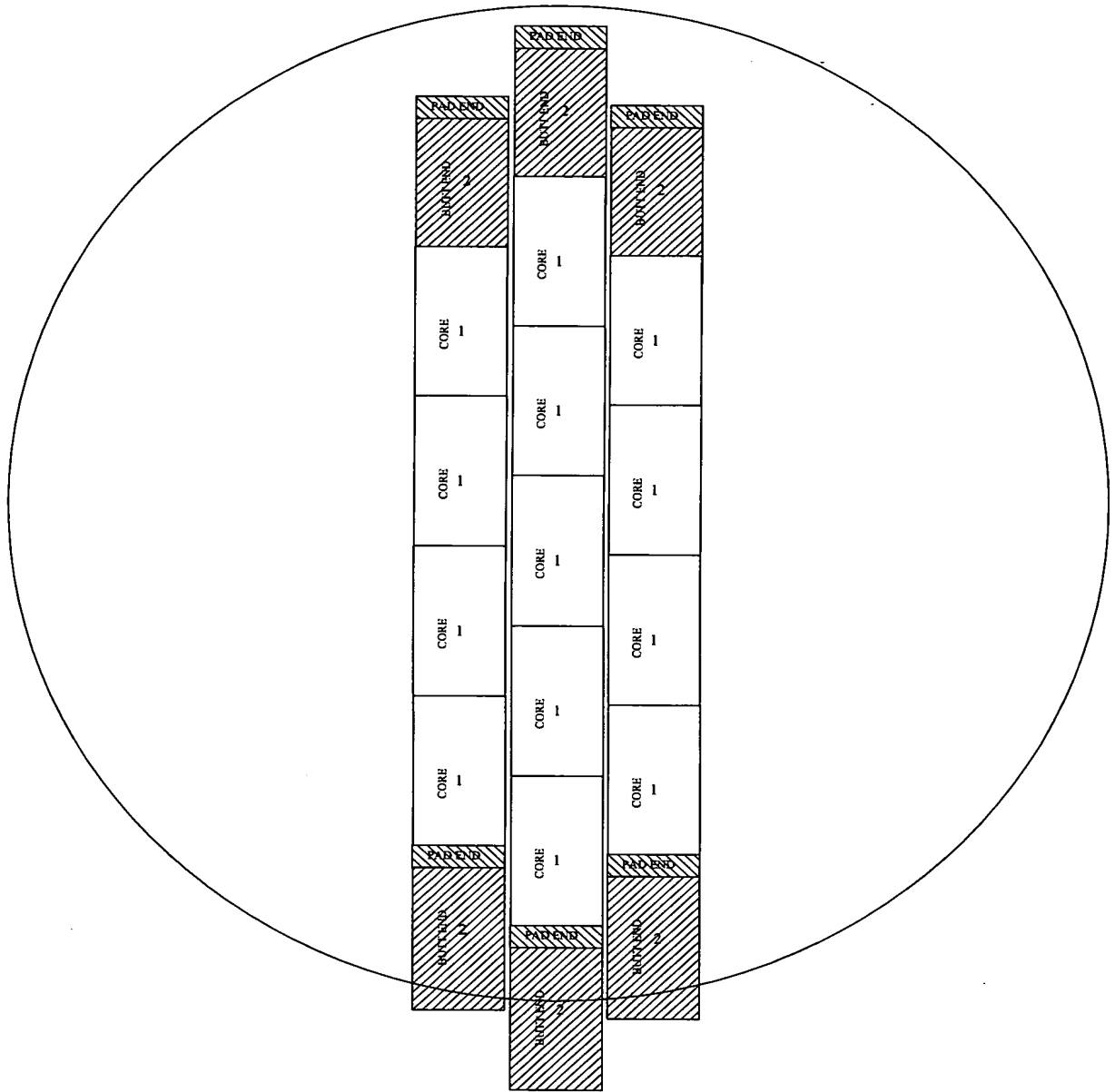


FIG. 324

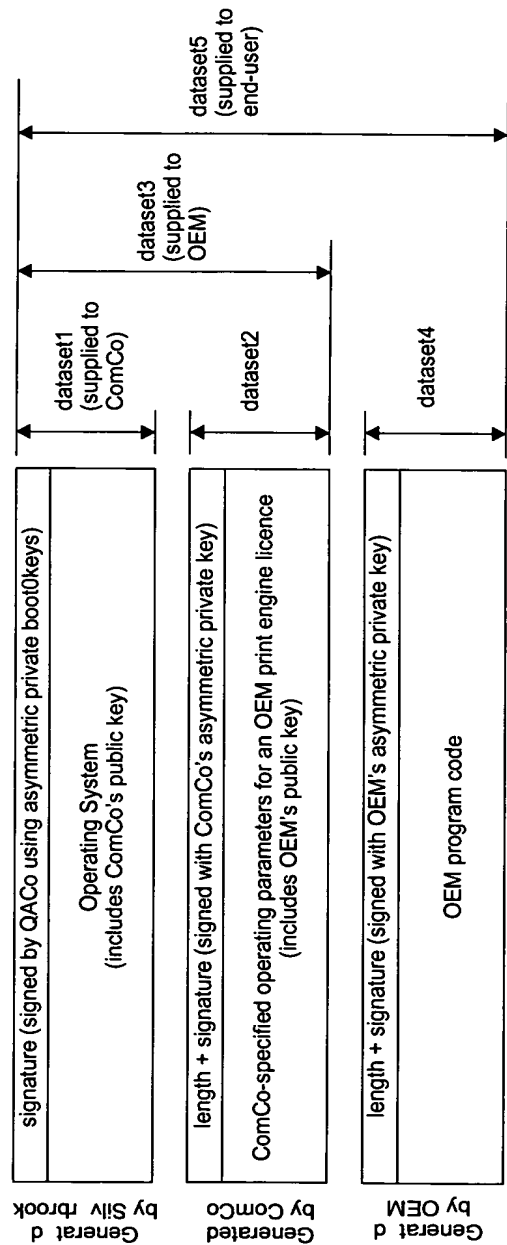


FIG. 325

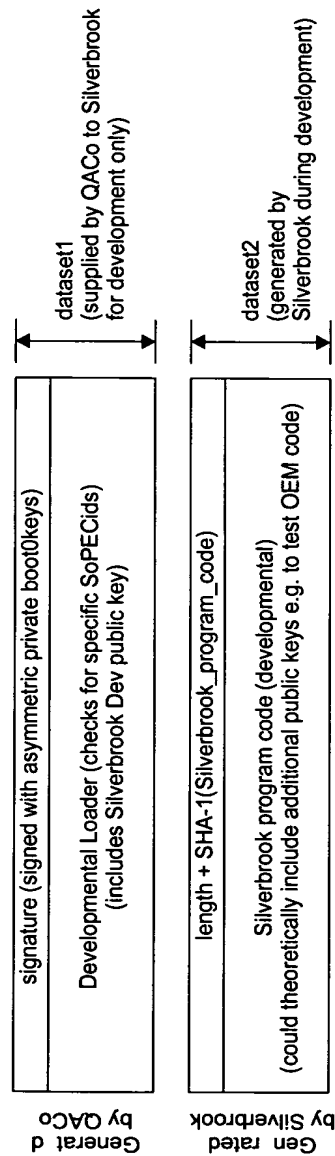
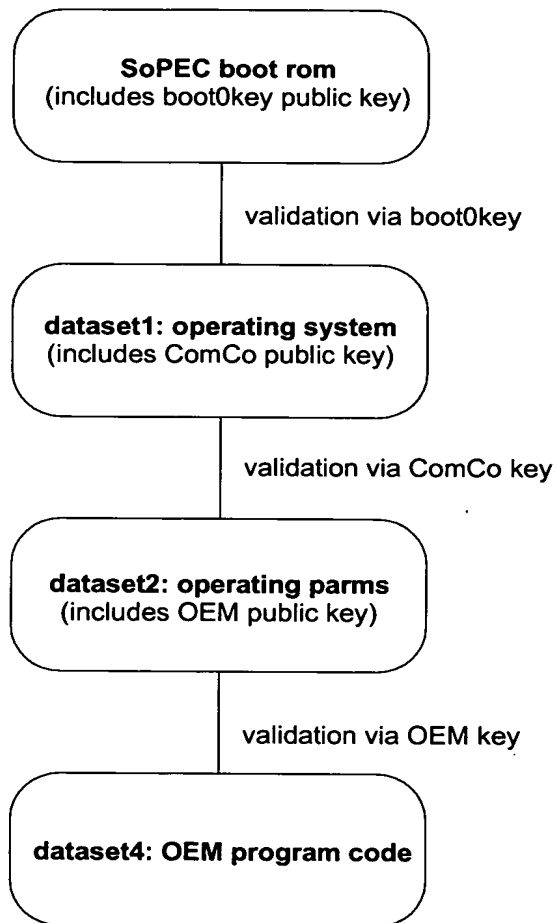


FIG. 327



*FIG. 326*

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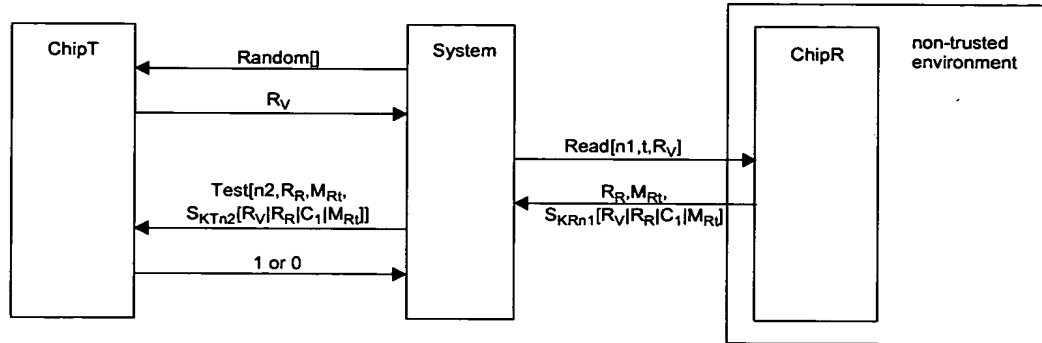


FIG. 328

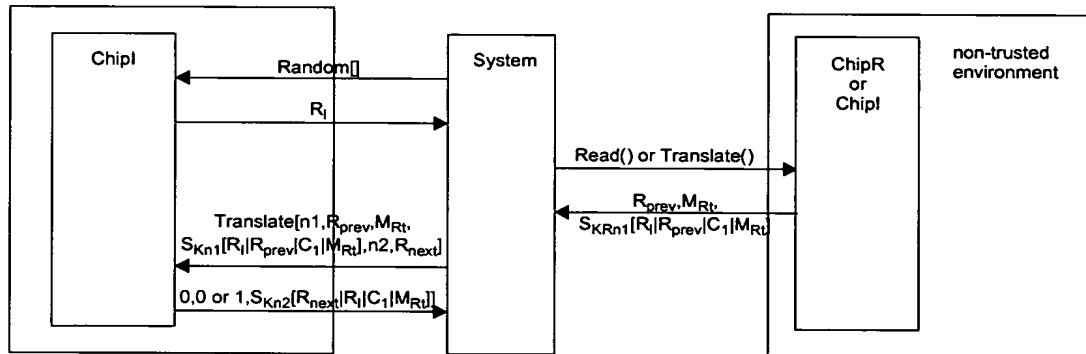


FIG. 329



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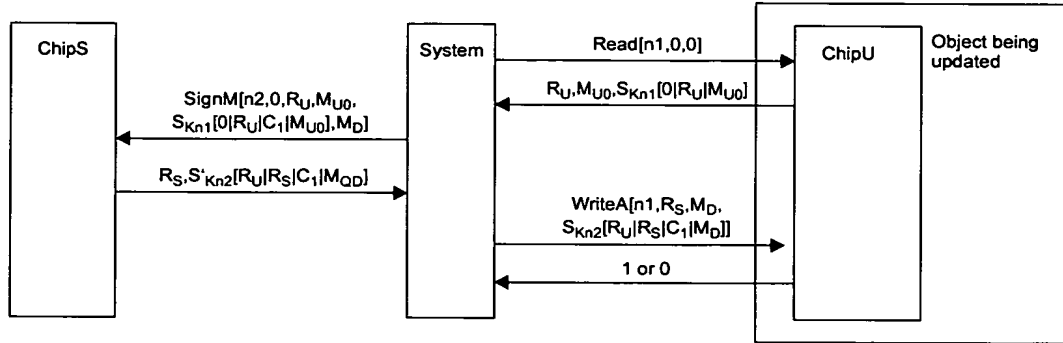


FIG. 330

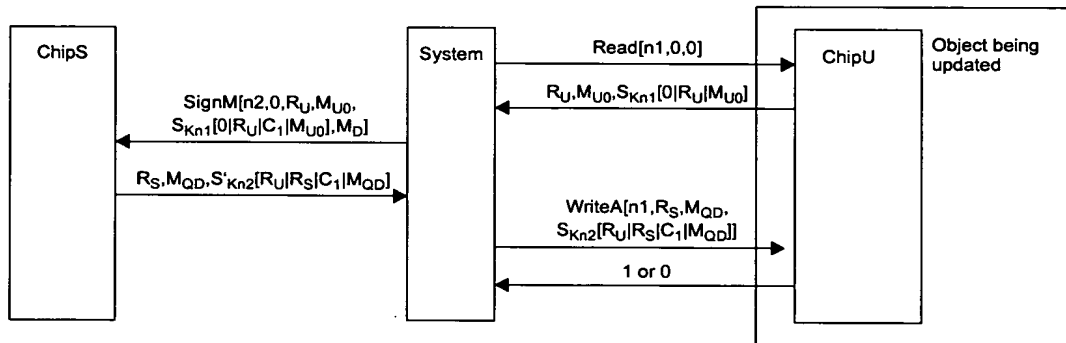


FIG. 331

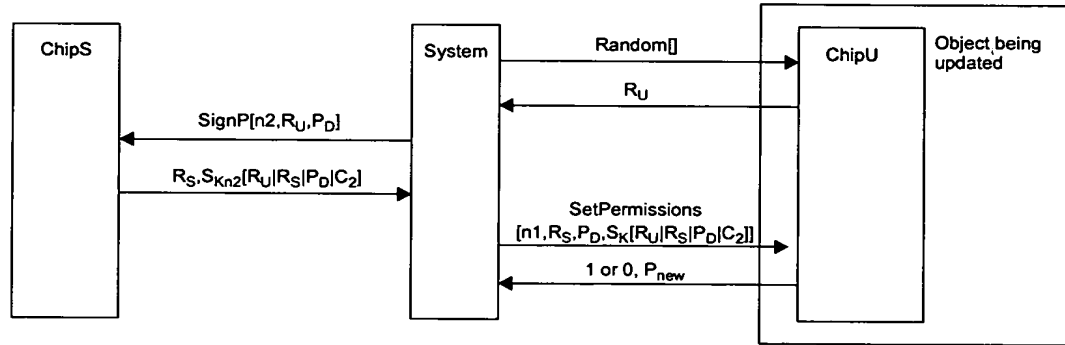


FIG. 332

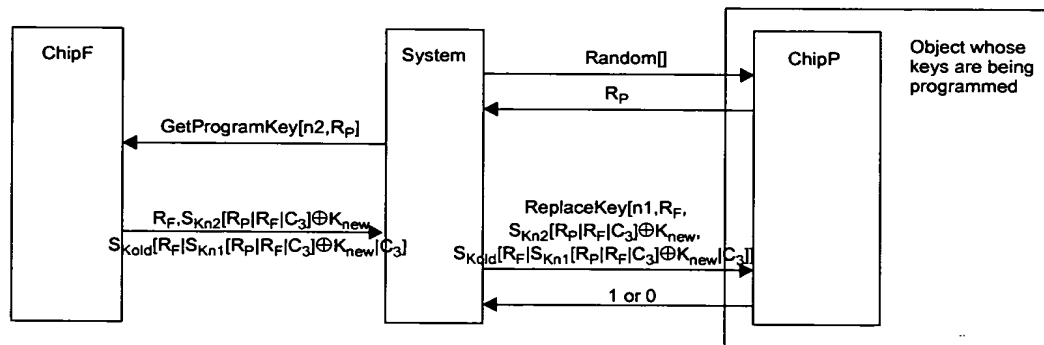


FIG. 333

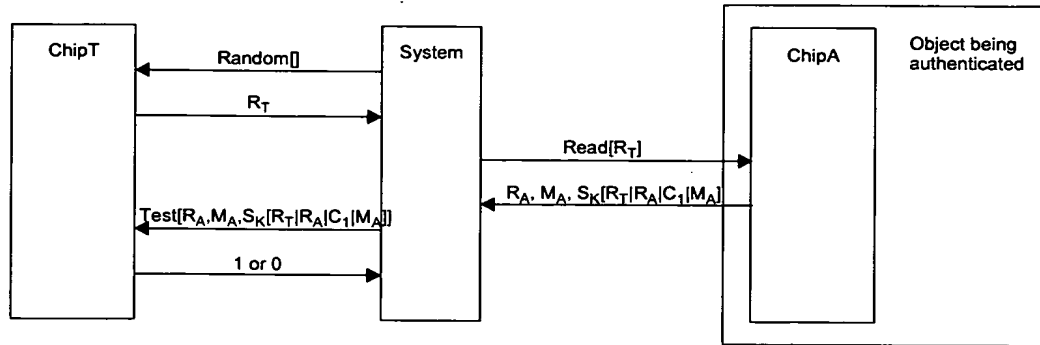


FIG. 334

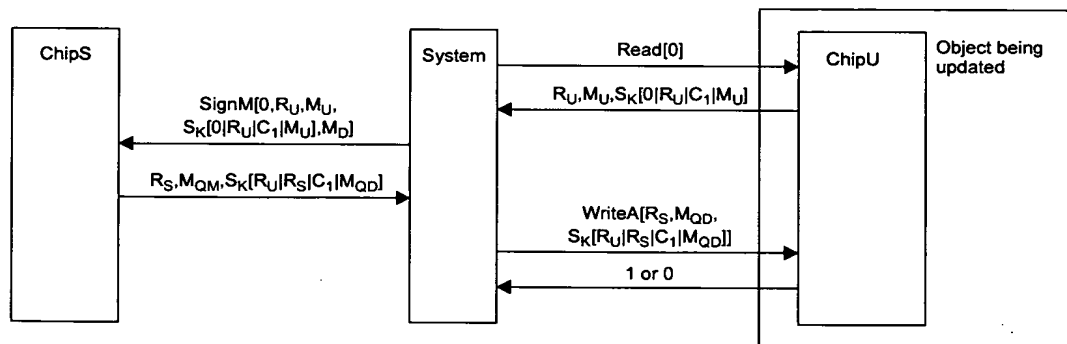


FIG. 335

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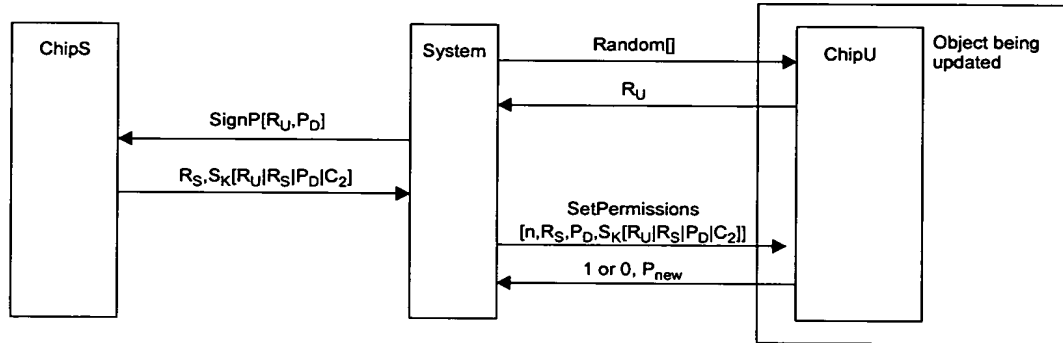


FIG. 336

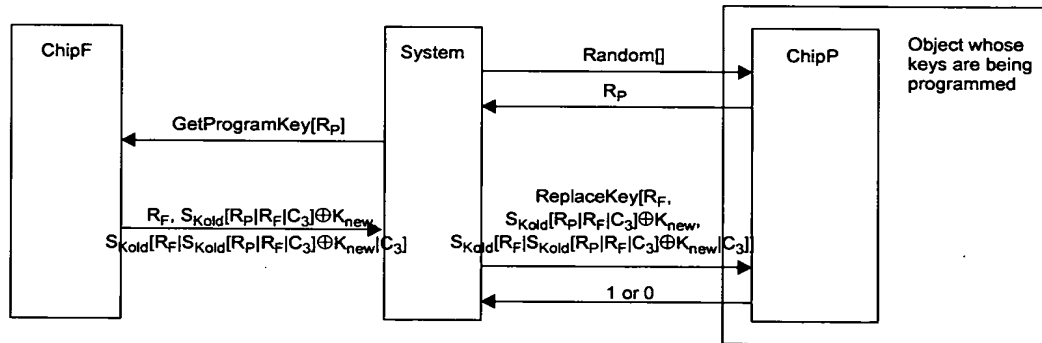


FIG. 337

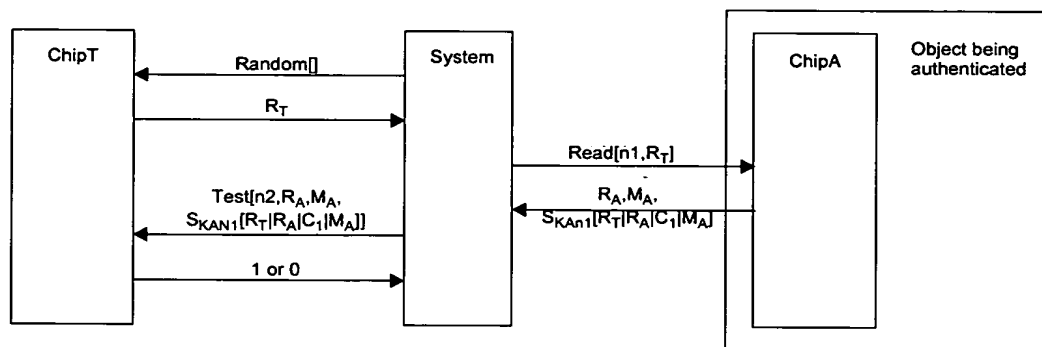


FIG. 338

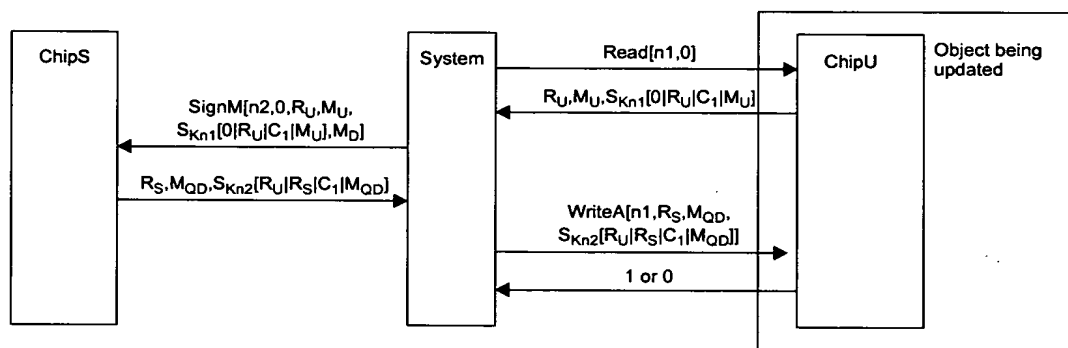


FIG. 339

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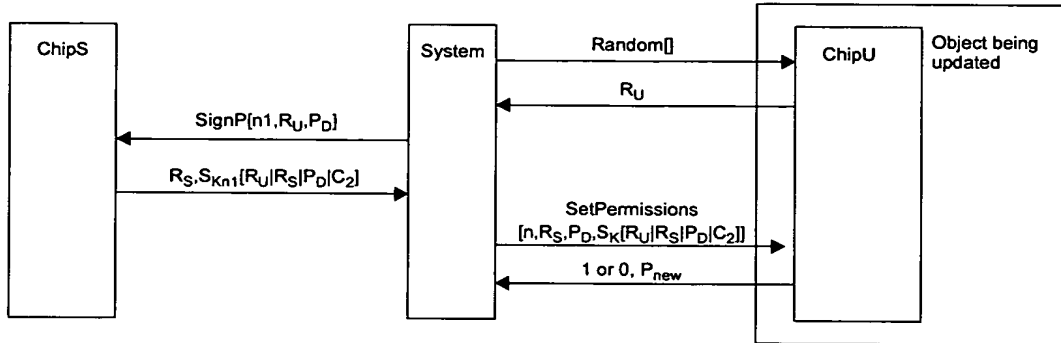


FIG. 340

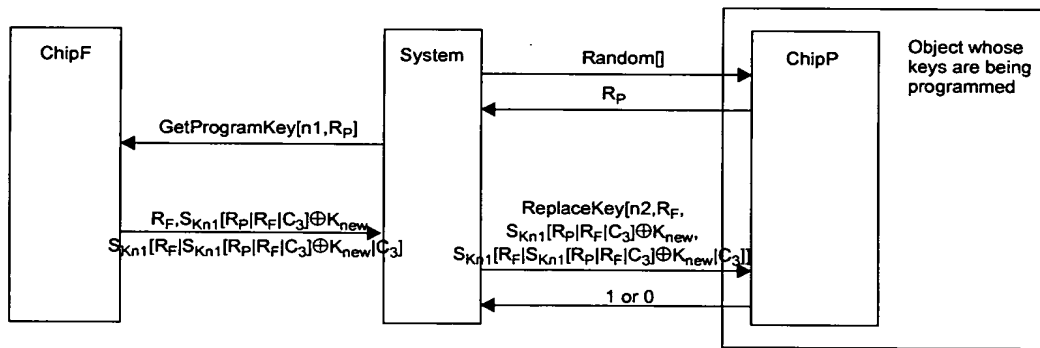


FIG. 341

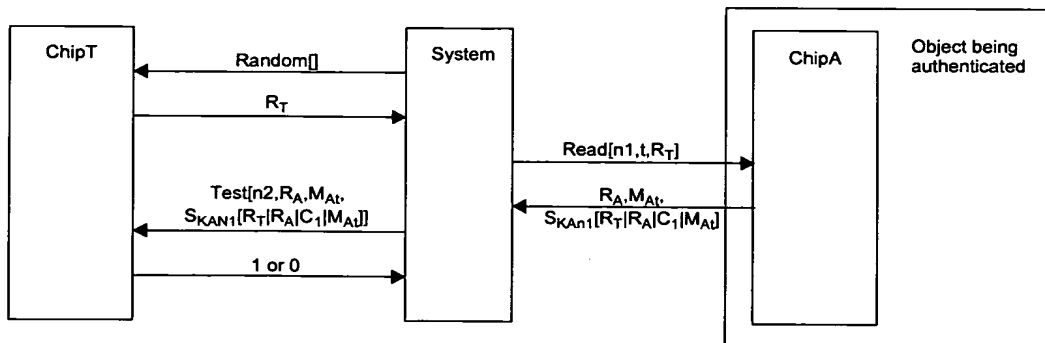


FIG. 342

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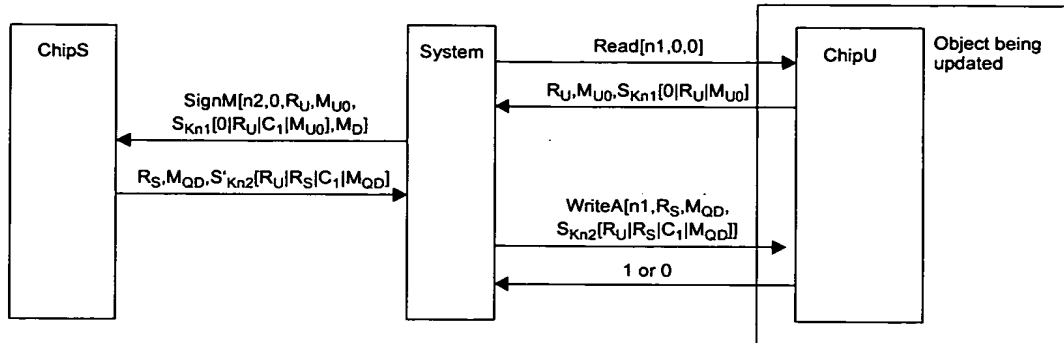


FIG. 343

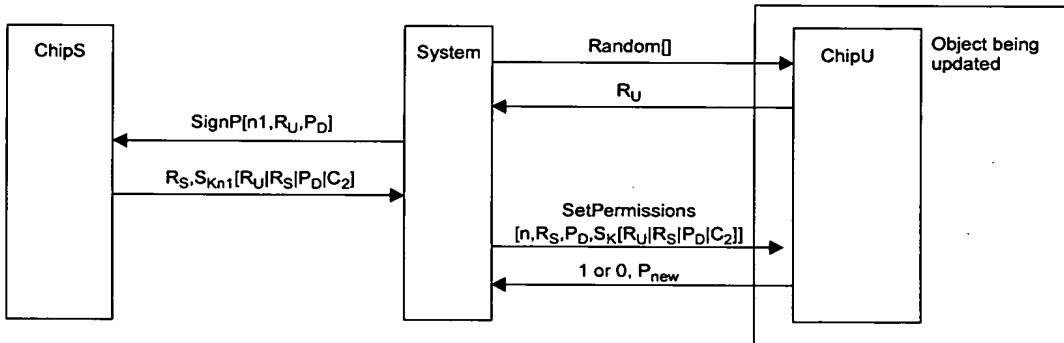


FIG. 344

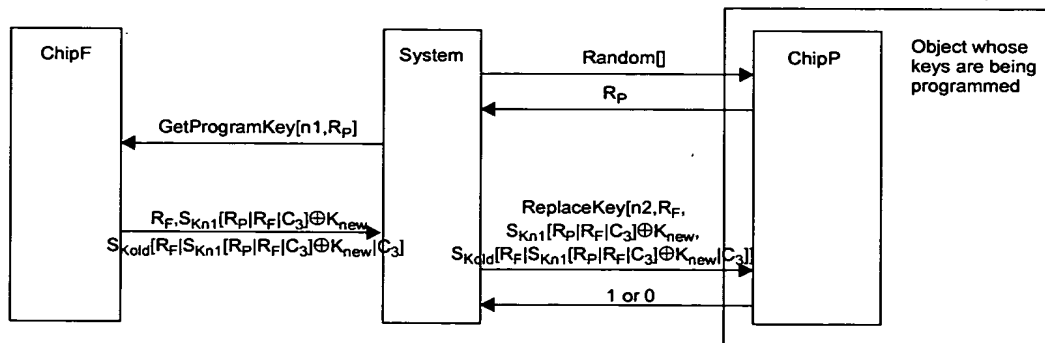


FIG. 345

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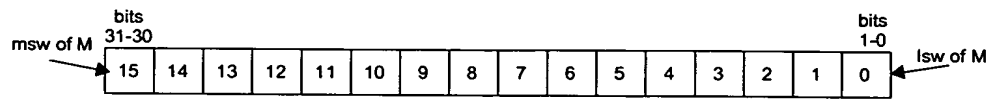


FIG. 346

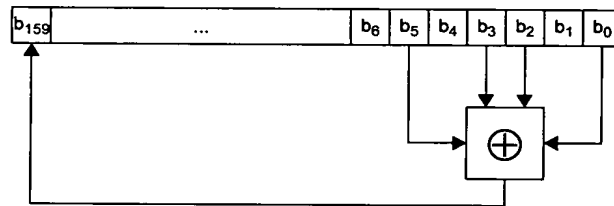


FIG. 347

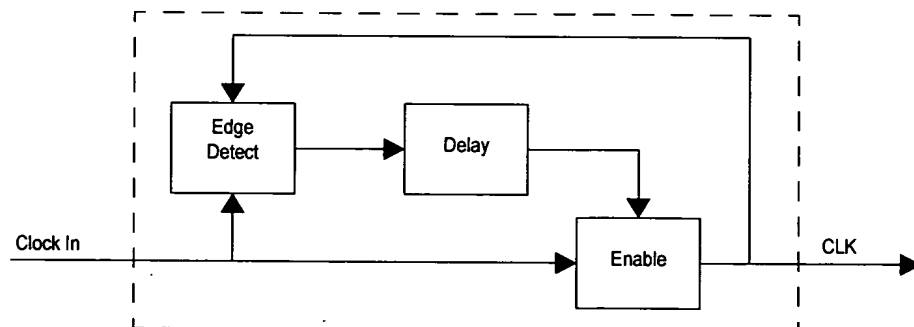


FIG. 348



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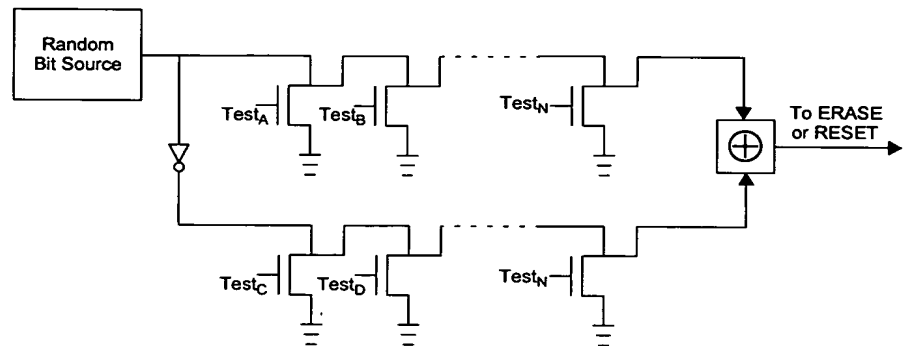


FIG. 349

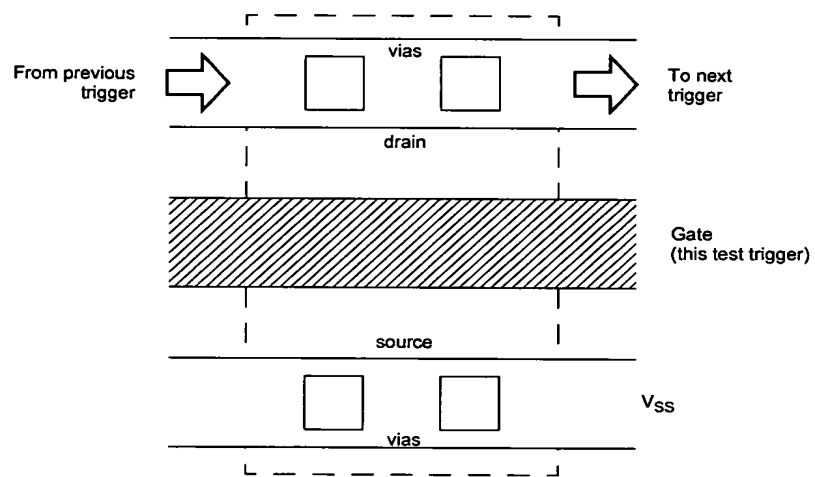


FIG. 350

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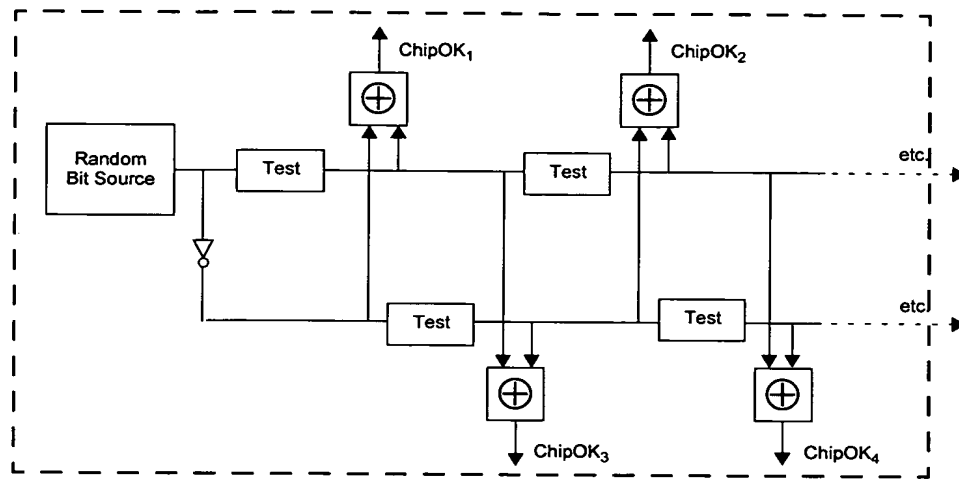


FIG. 351

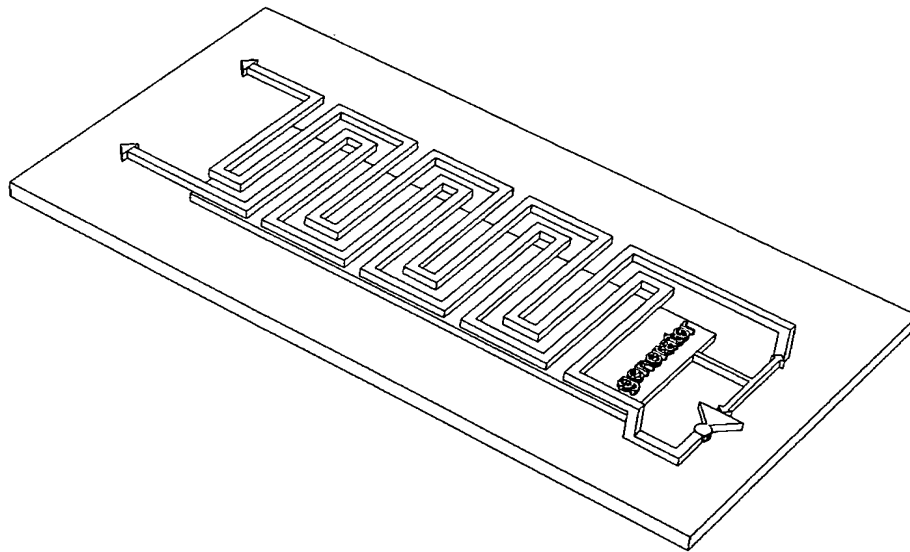


FIG. 352

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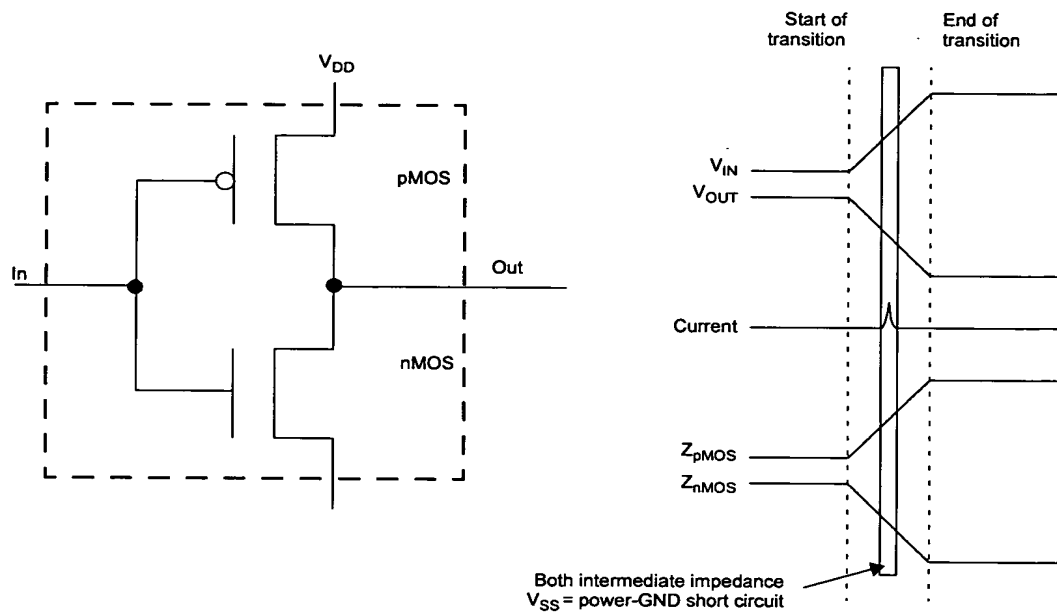


FIG. 353

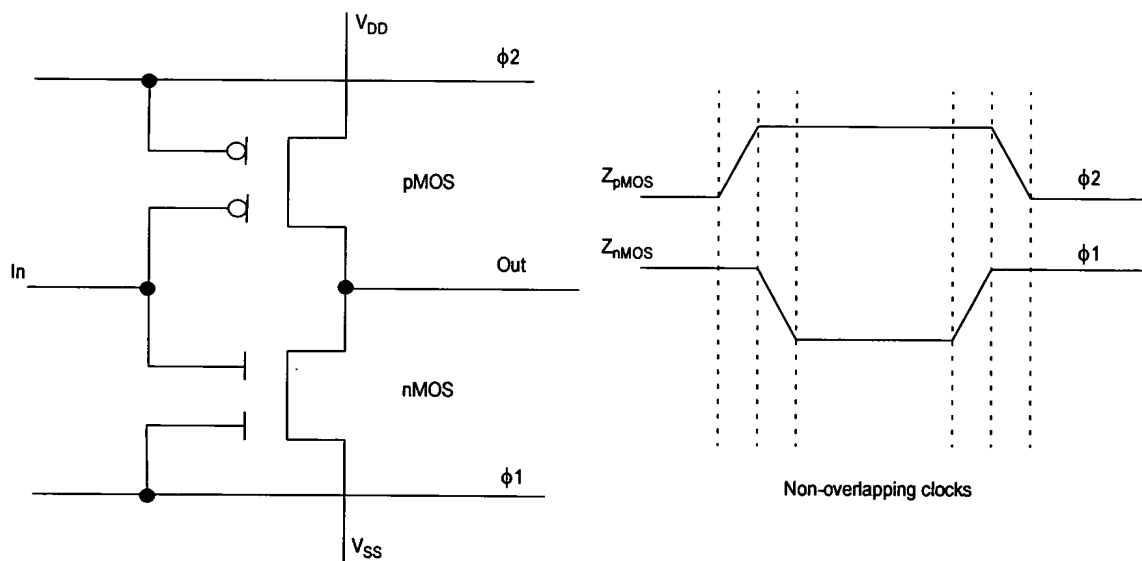


FIG. 354

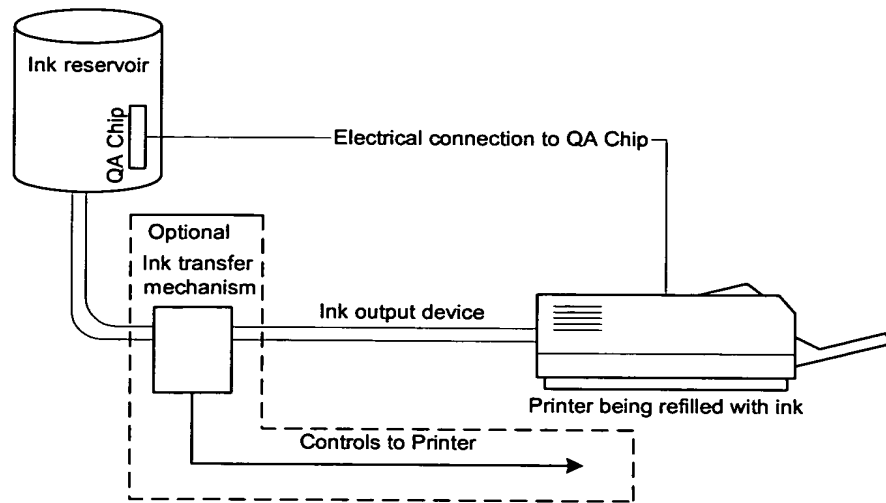


FIG. 355

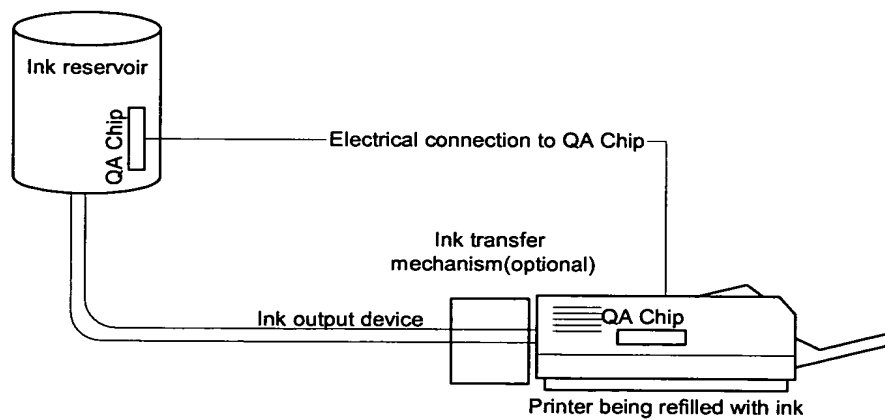


FIG. 356

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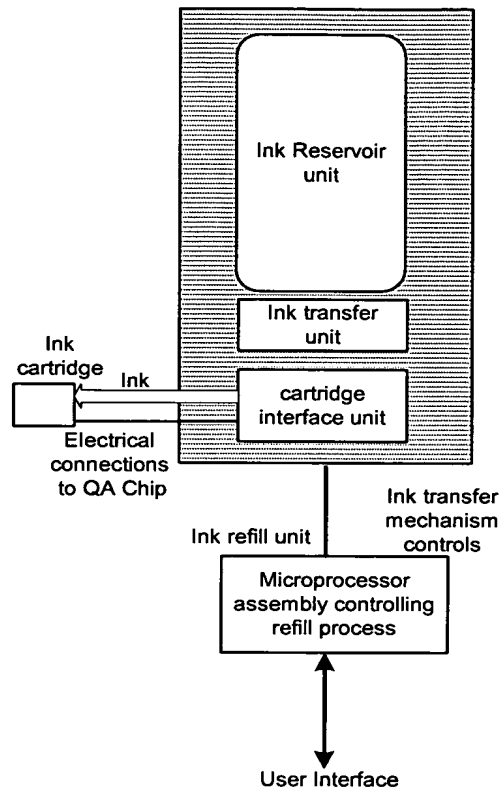


FIG. 357

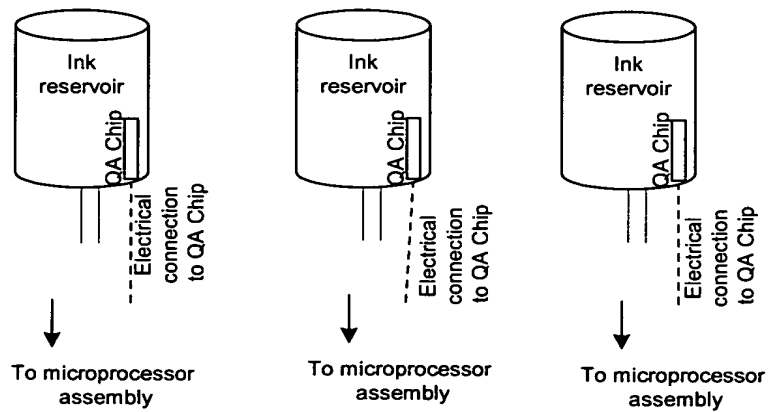


FIG. 358

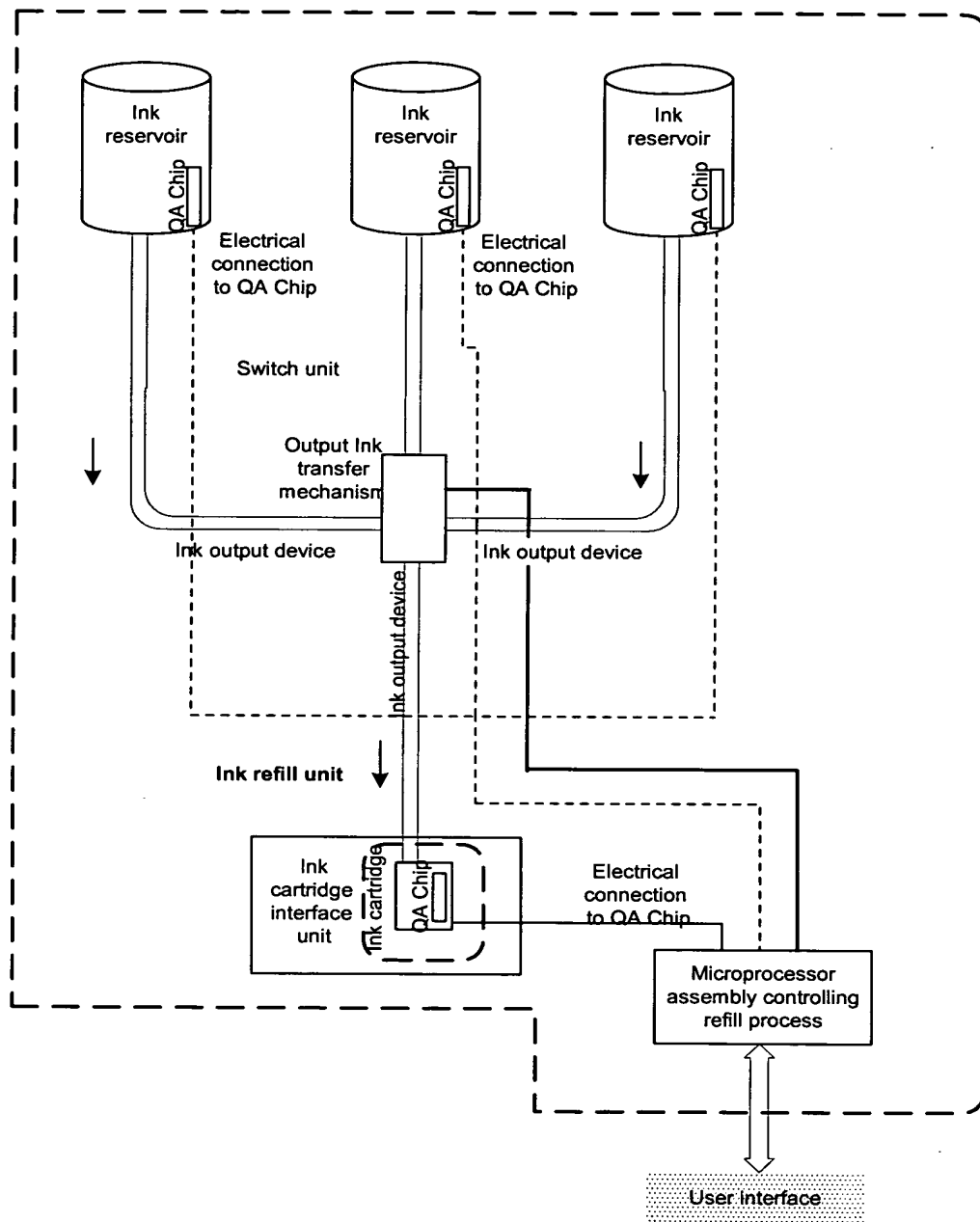


FIG. 359

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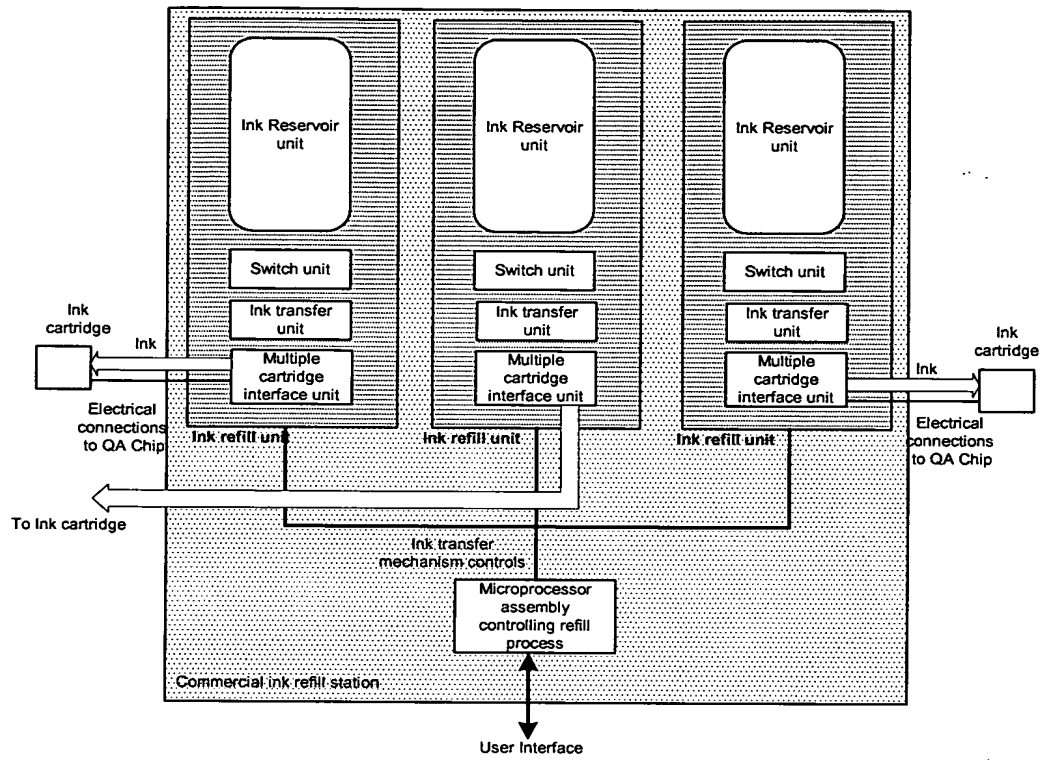


FIG. 360

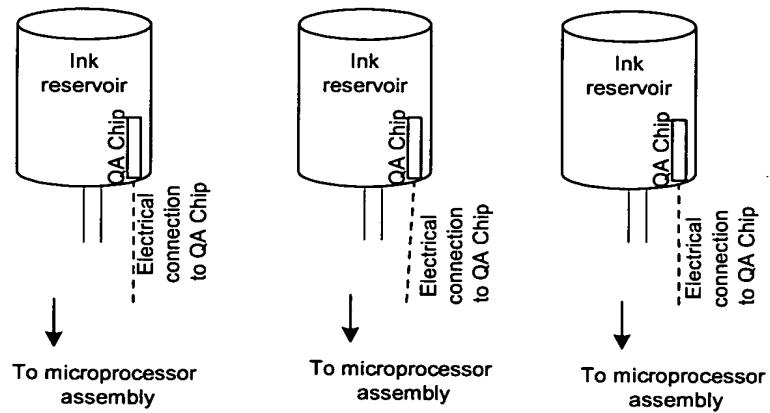


FIG. 361

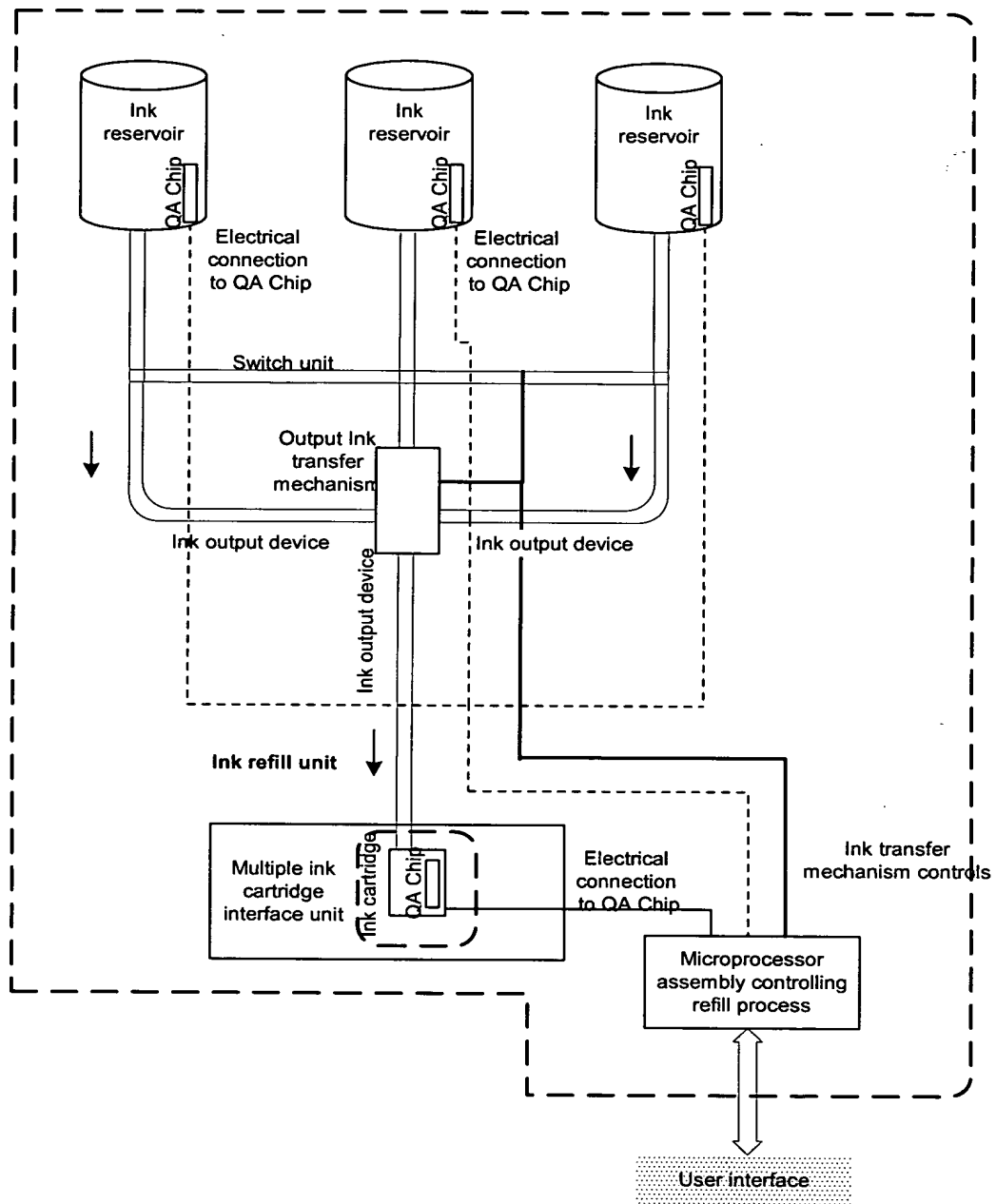


FIG. 362



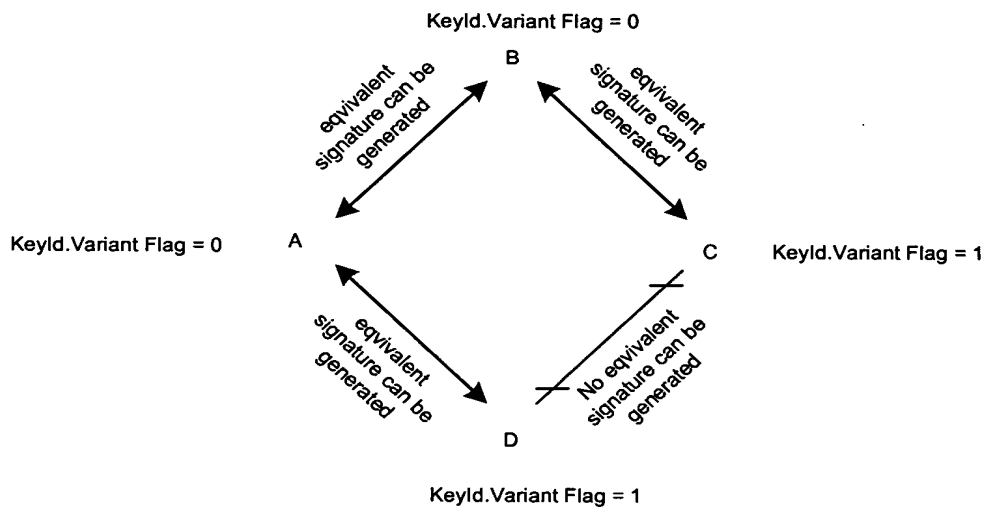


FIG. 363

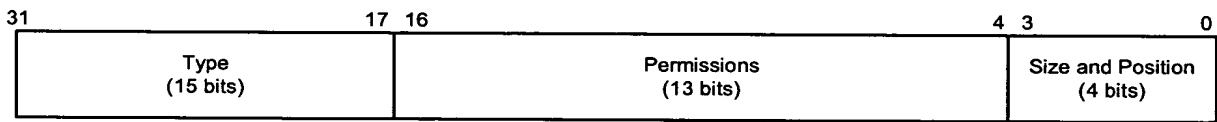


FIG. 364

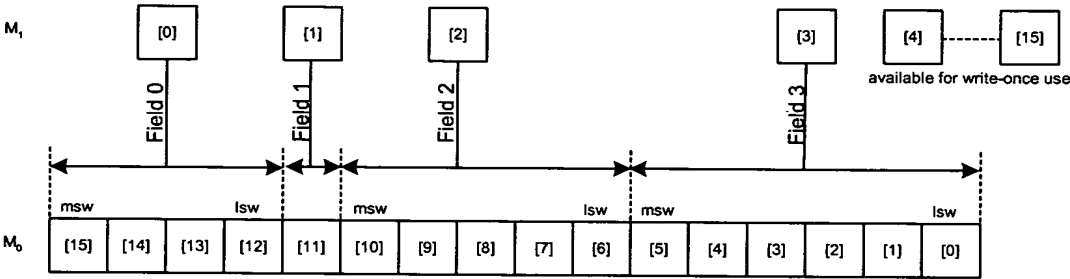


FIG. 365

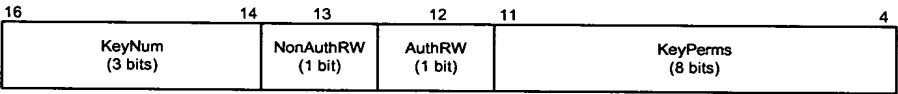


FIG. 366

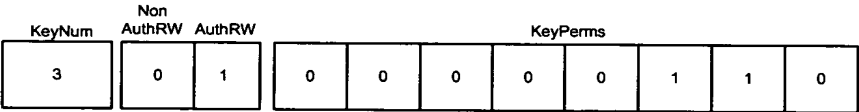


FIG. 367

KeyNum	Non		KeyPerms							
	AuthRW	AuthRW								
3	1	1	0	0	0	0	1	1	1	0

FIG. 368

31	17 16				14	13	12	11	4 3		0
Type (15 bits)				KeyNum (3 bits)		NonAuth RW (1 bit)	AuthRW (1 bit)	KeyPerms (8 bits)			EndPos (4 bits)

FIG. 369

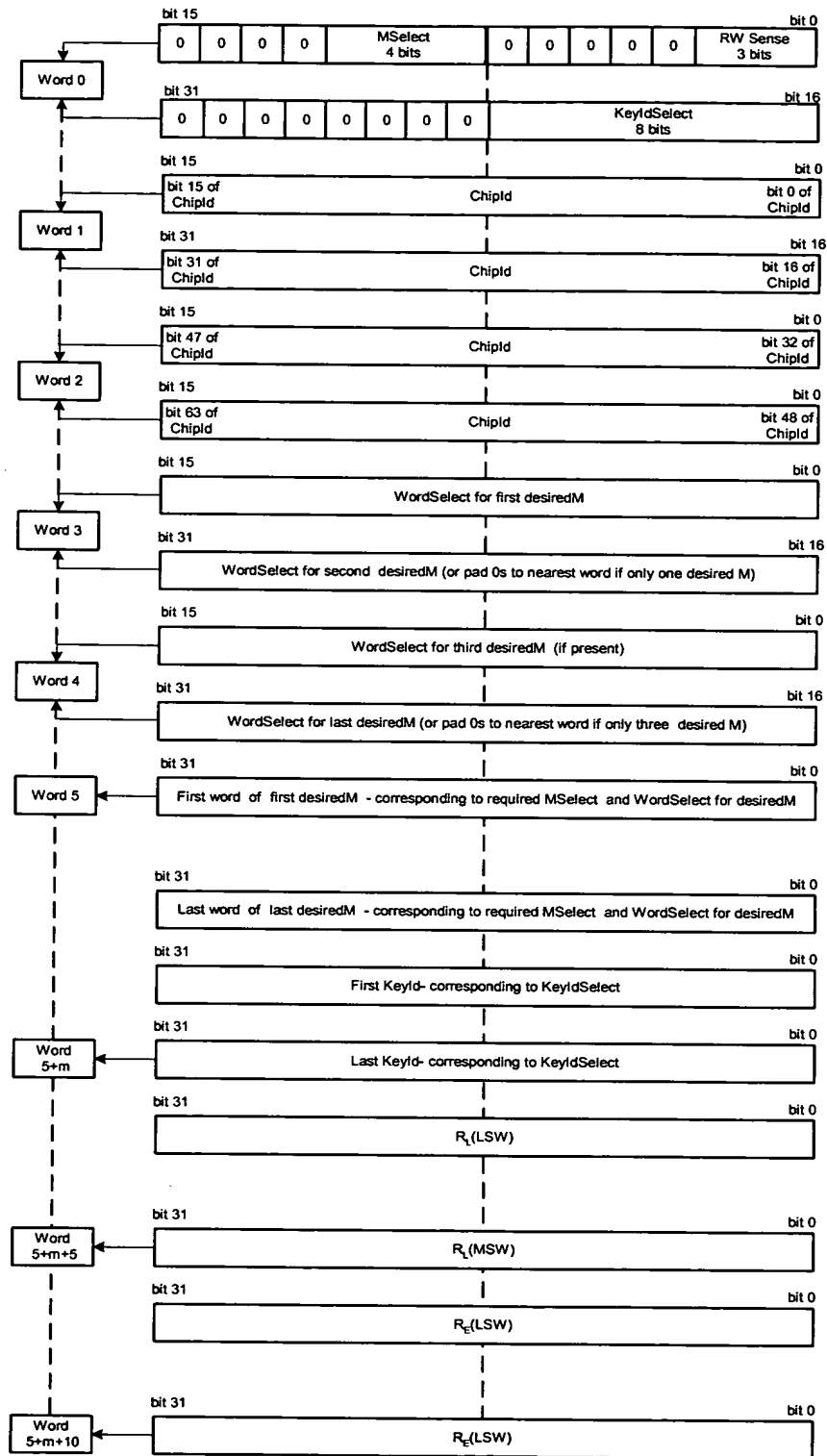


FIG. 370

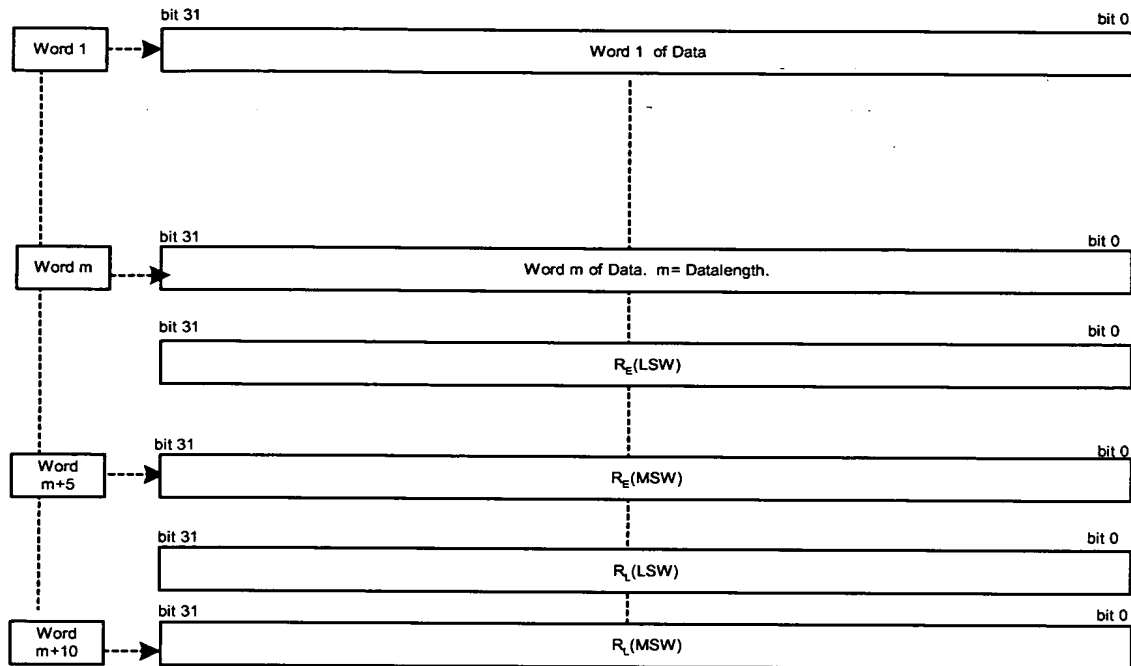


FIG. 371

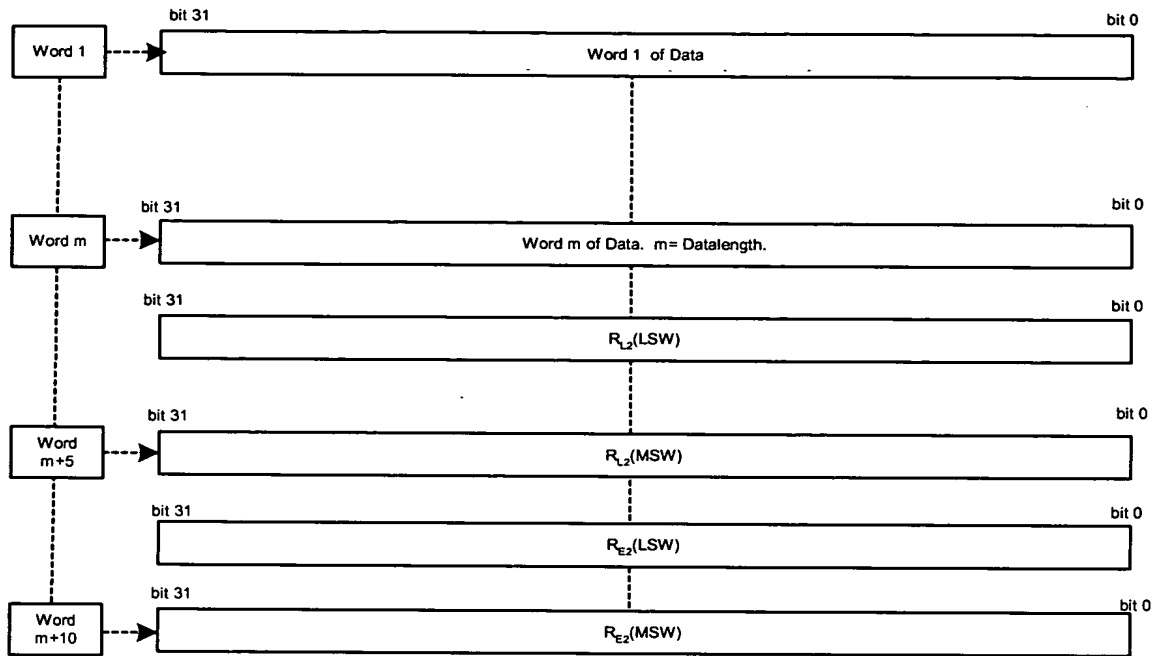


FIG. 372

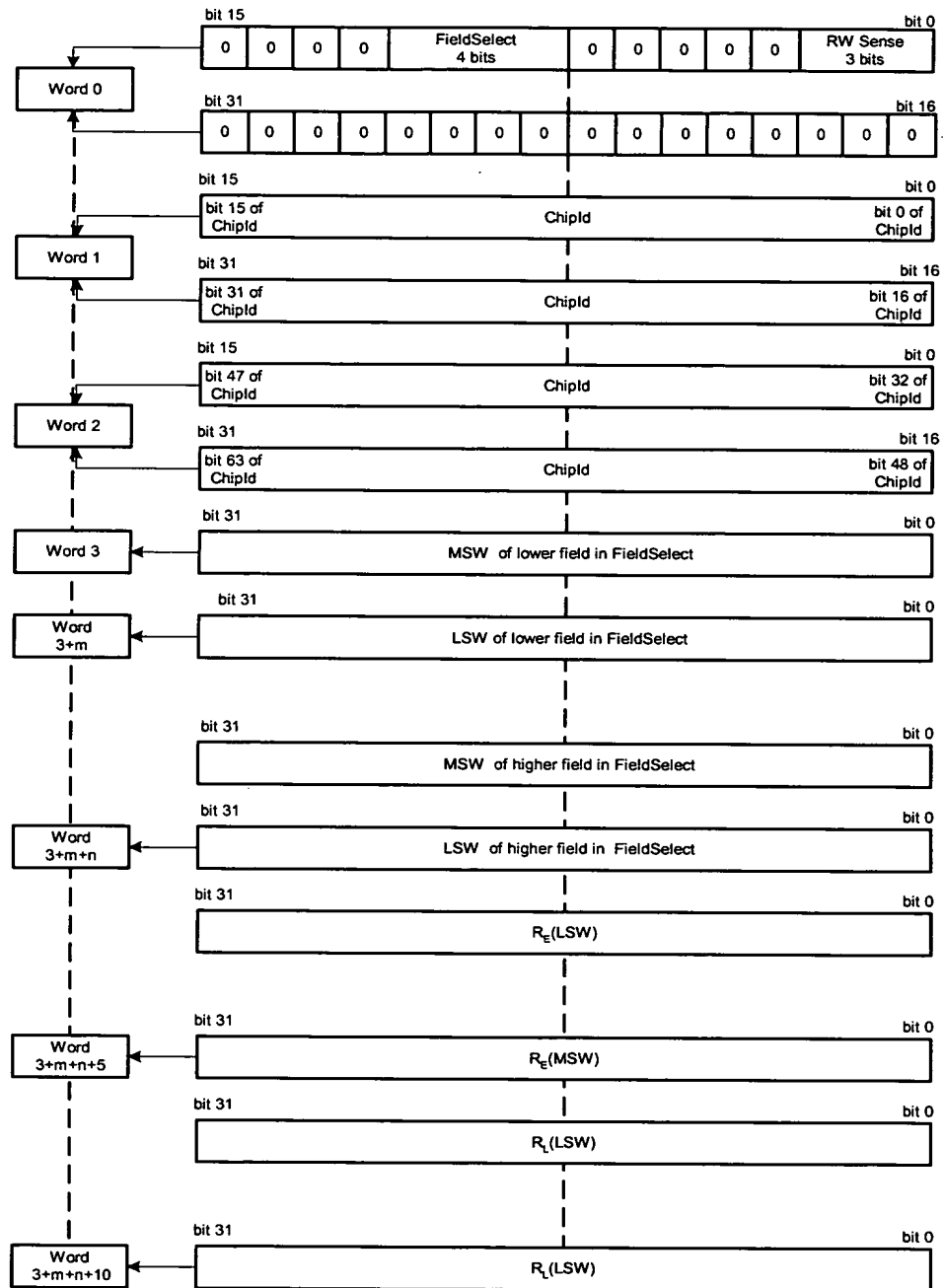


FIG. 373

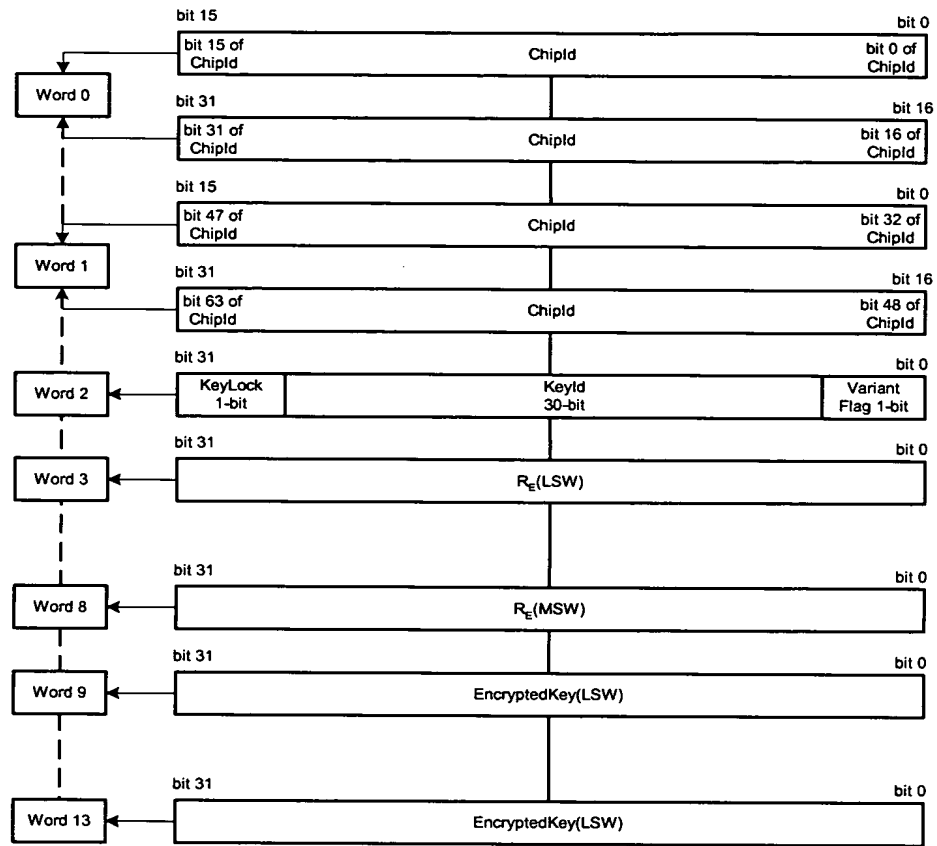


FIG. 374



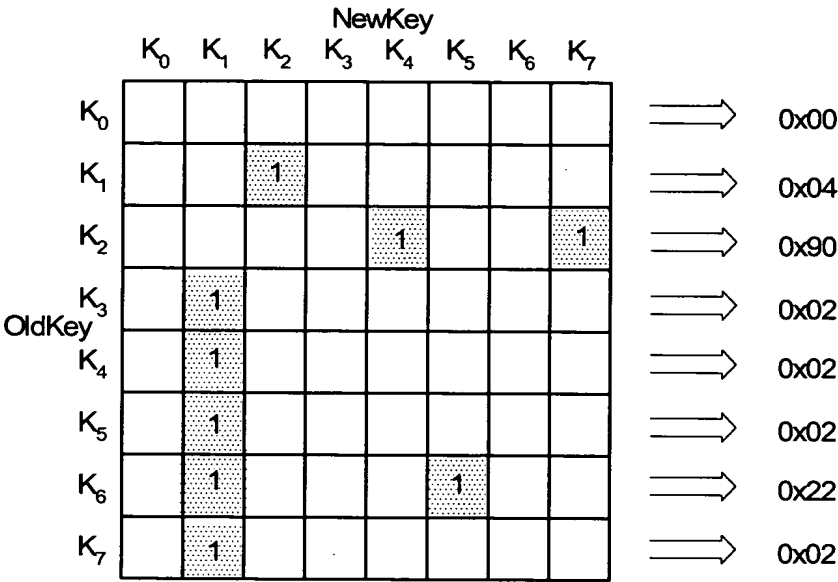


FIG. 375

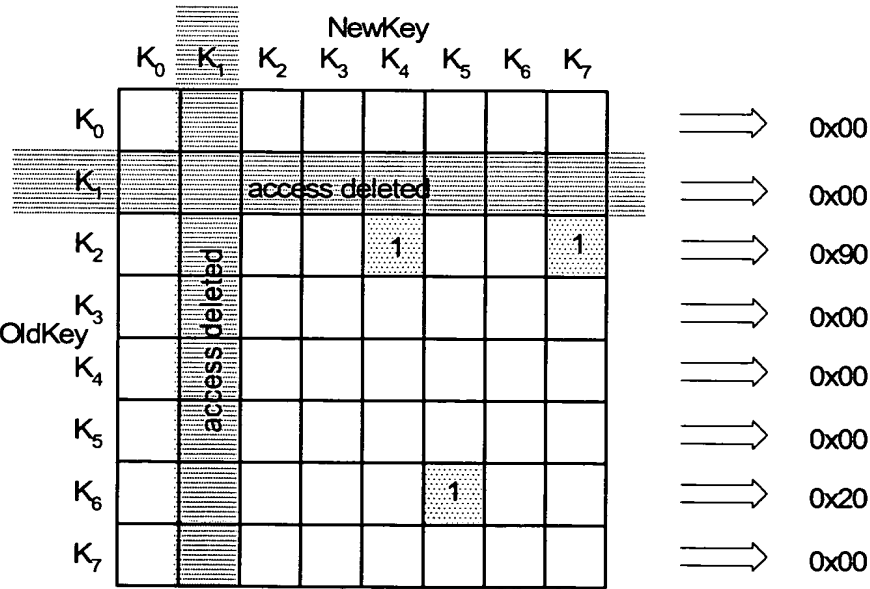


FIG. 376

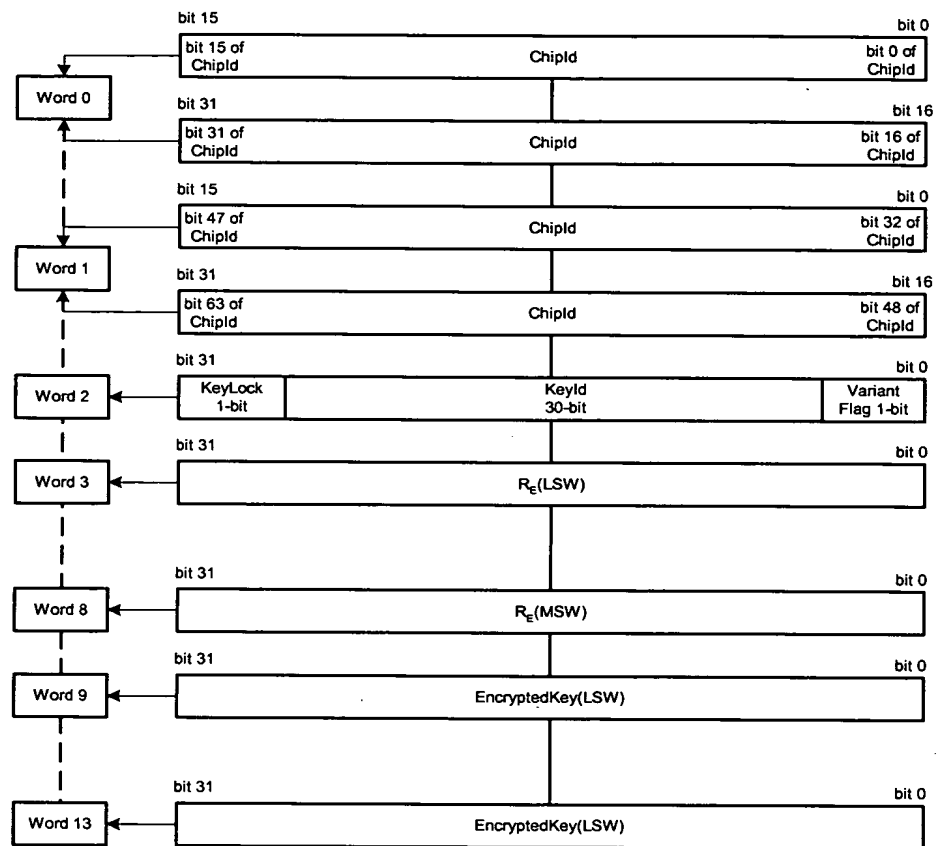


FIG. 377

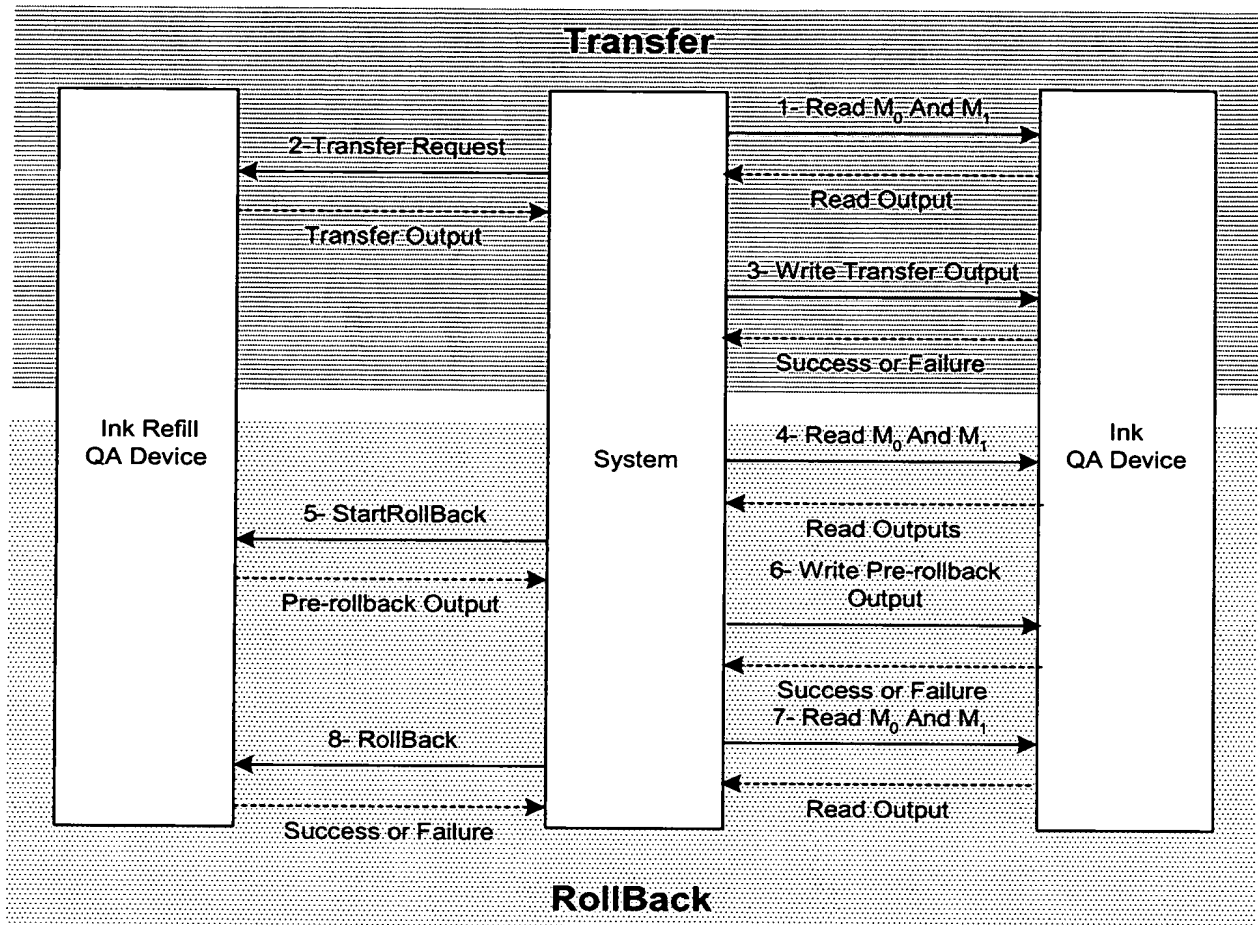


FIG. 378

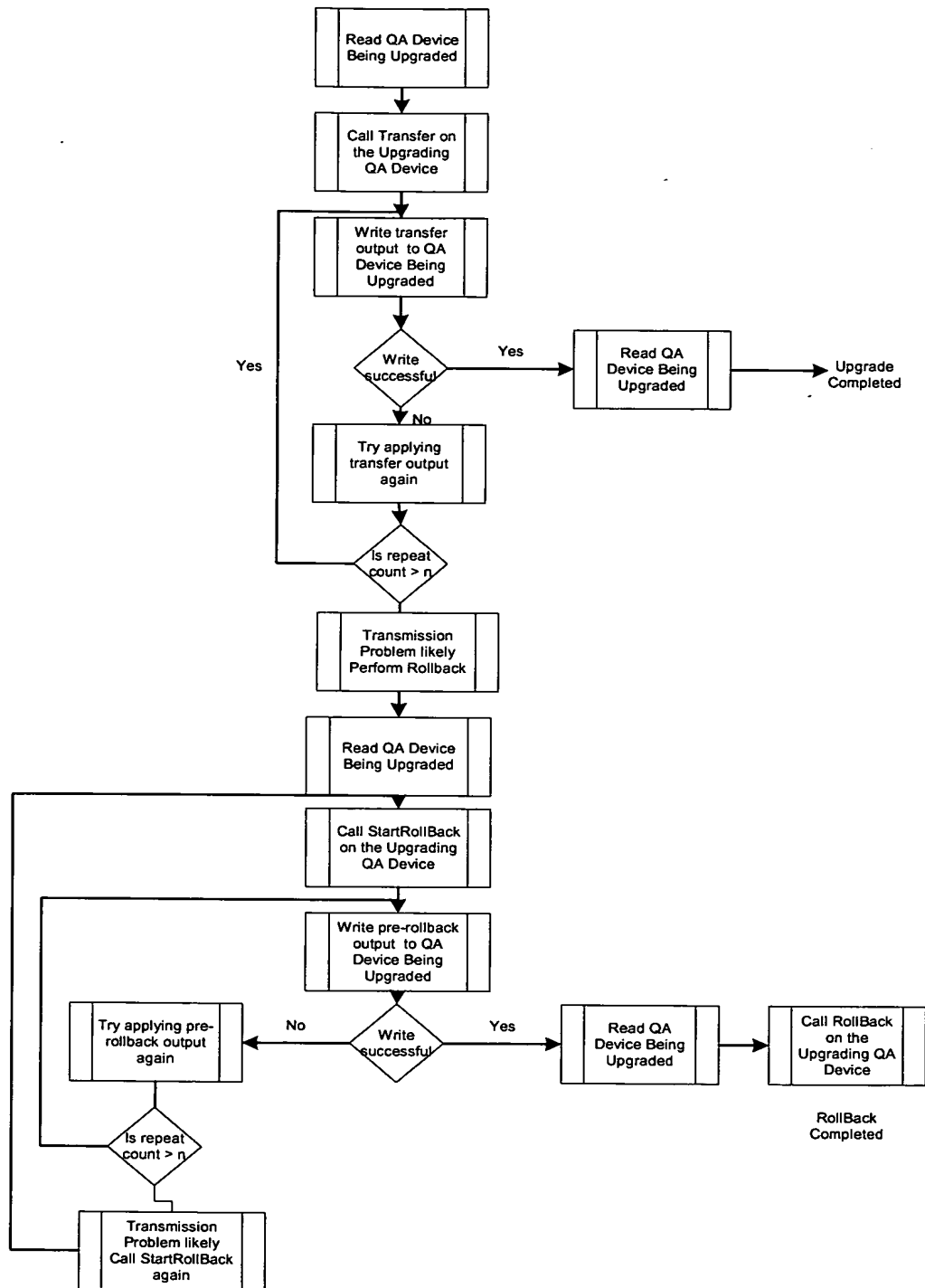
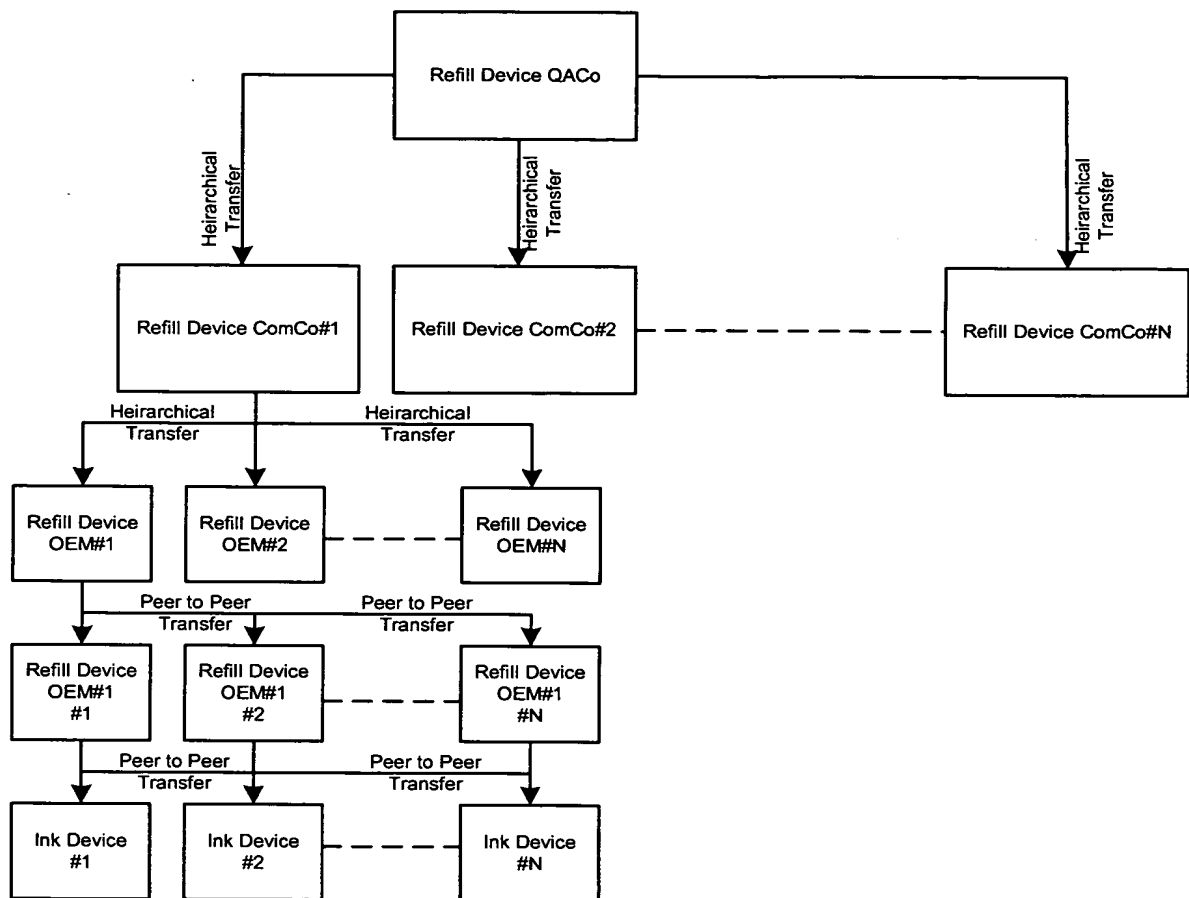


FIG. 379

*FIG. 380*

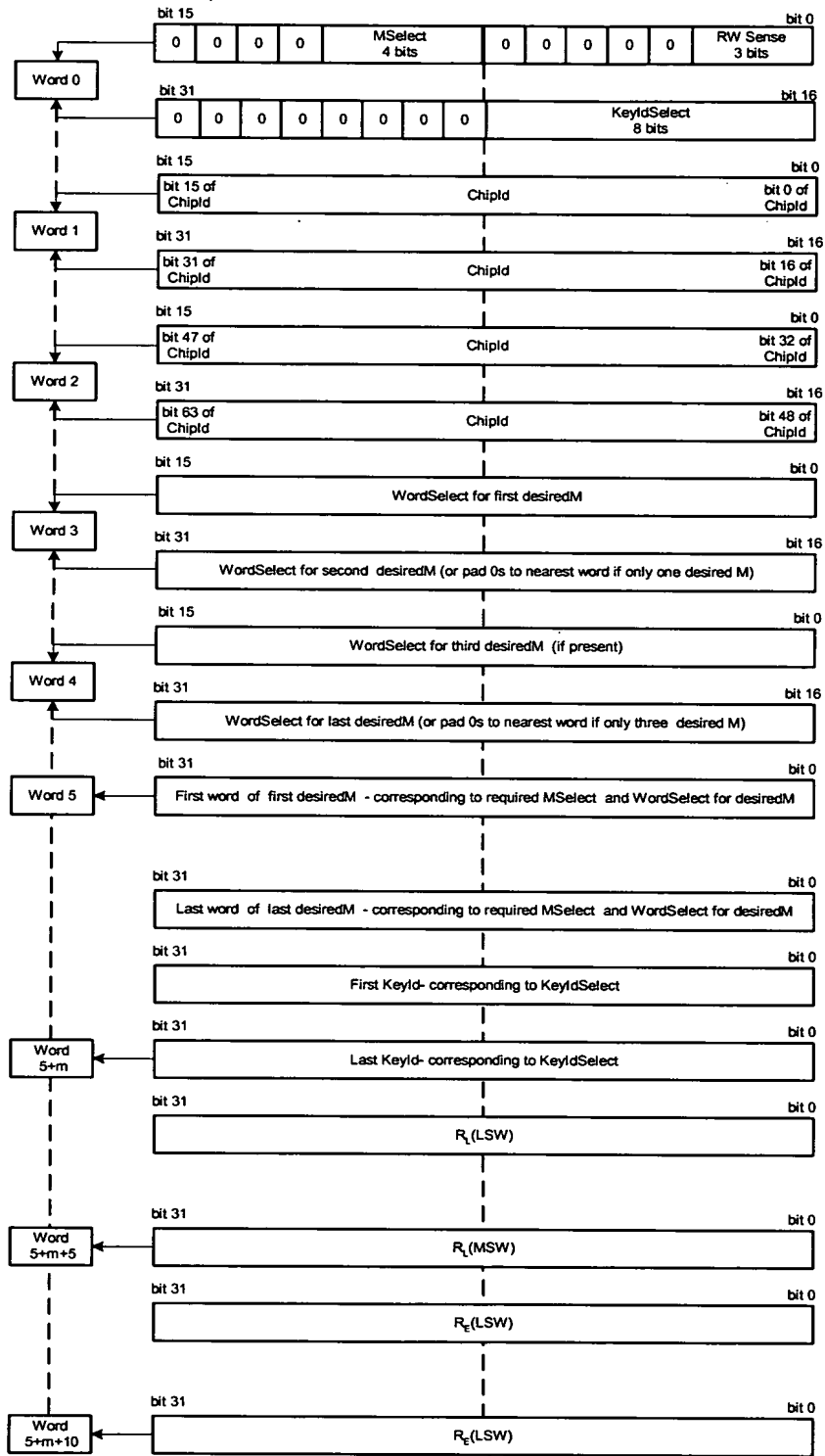


FIG. 381

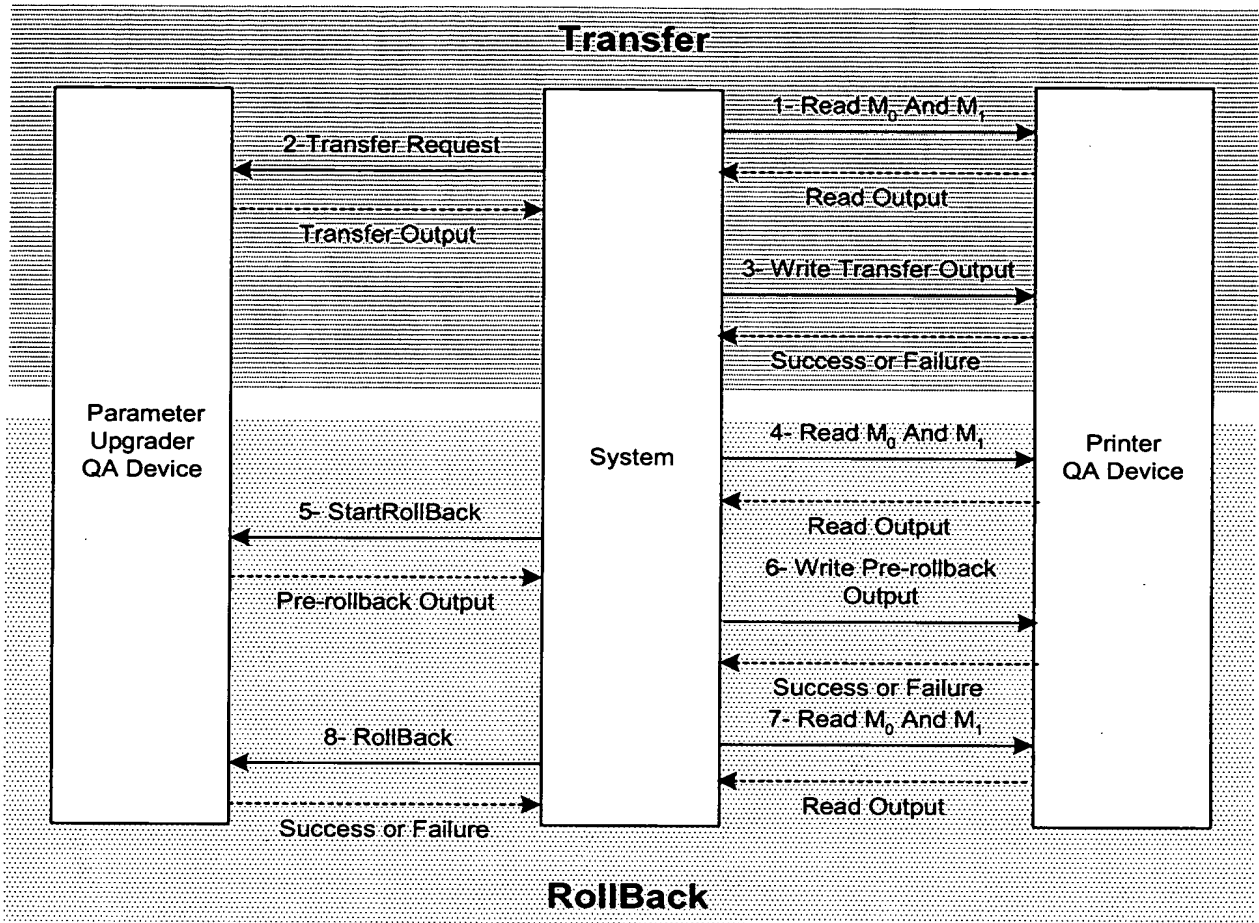


FIG. 382

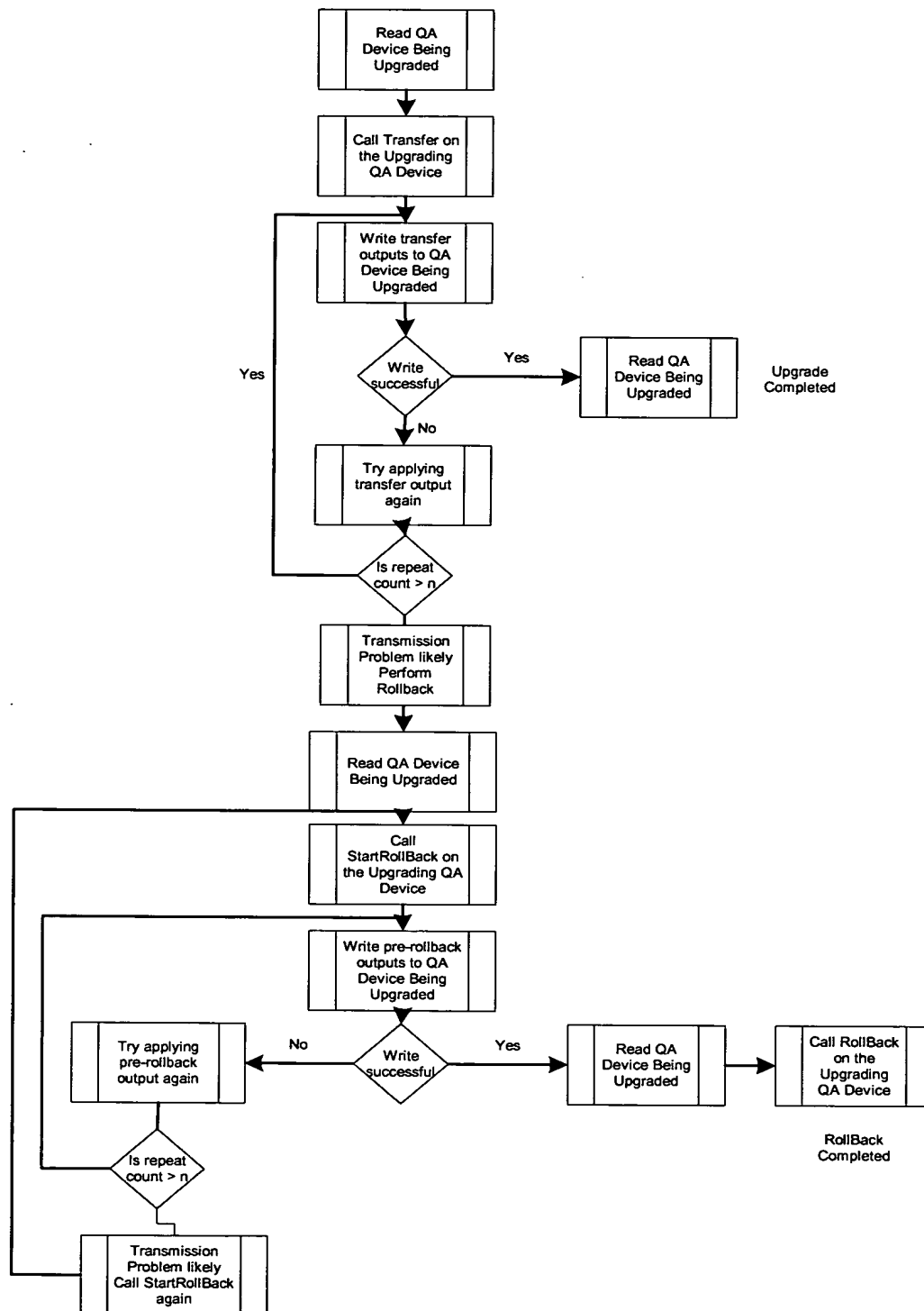


FIG. 383



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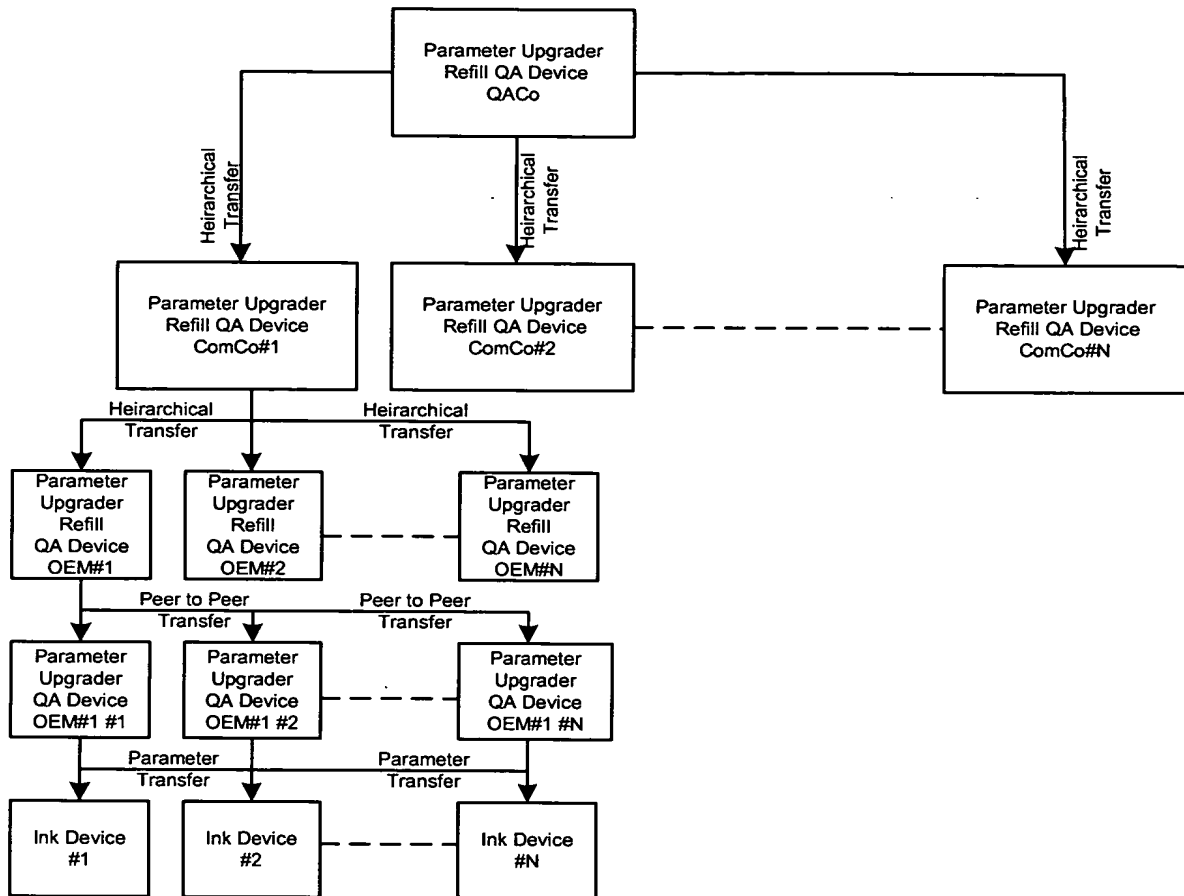


FIG. 384

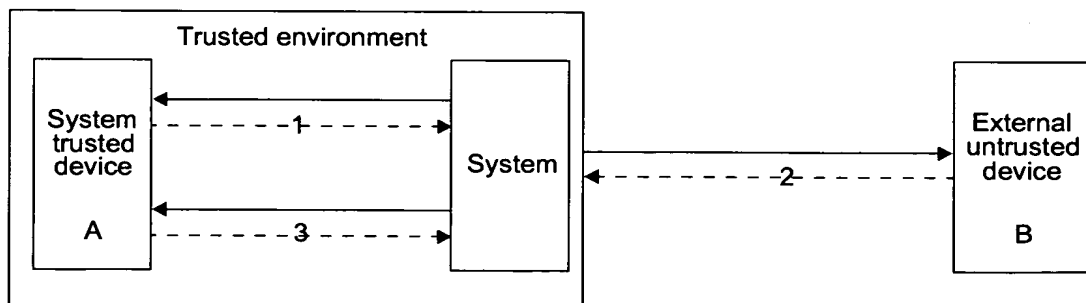


FIG. 385

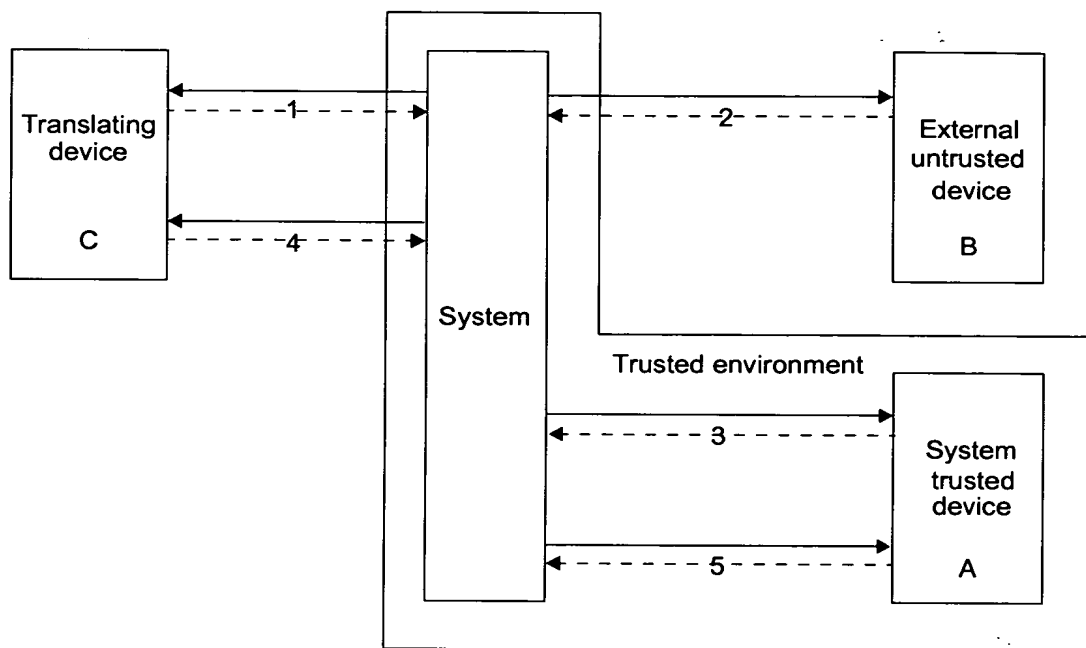


FIG. 386

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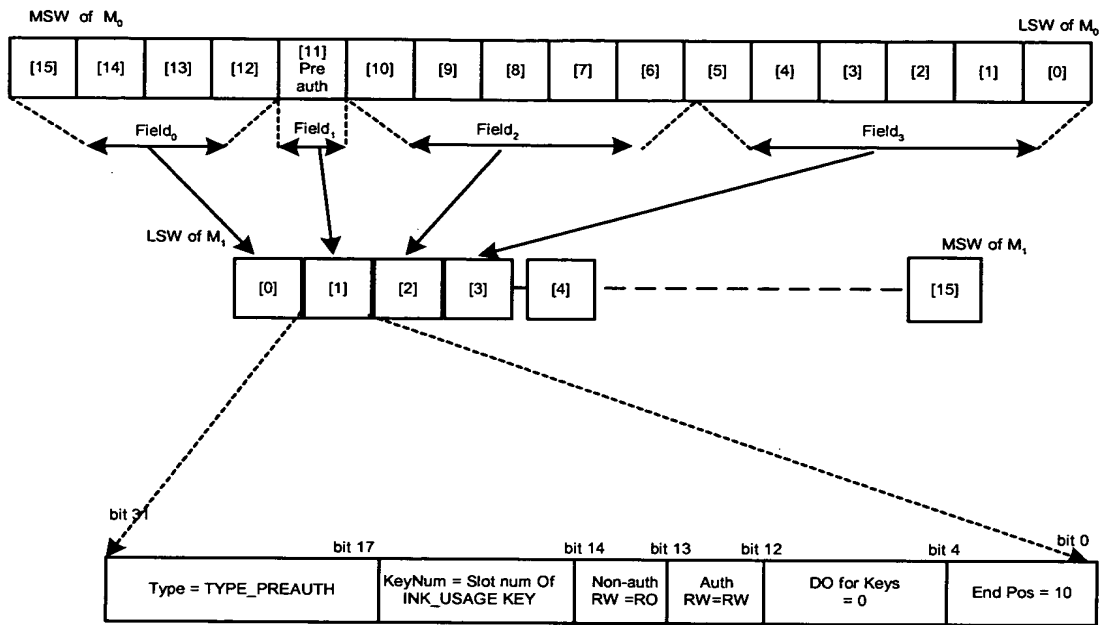


FIG. 387



FIG. 388

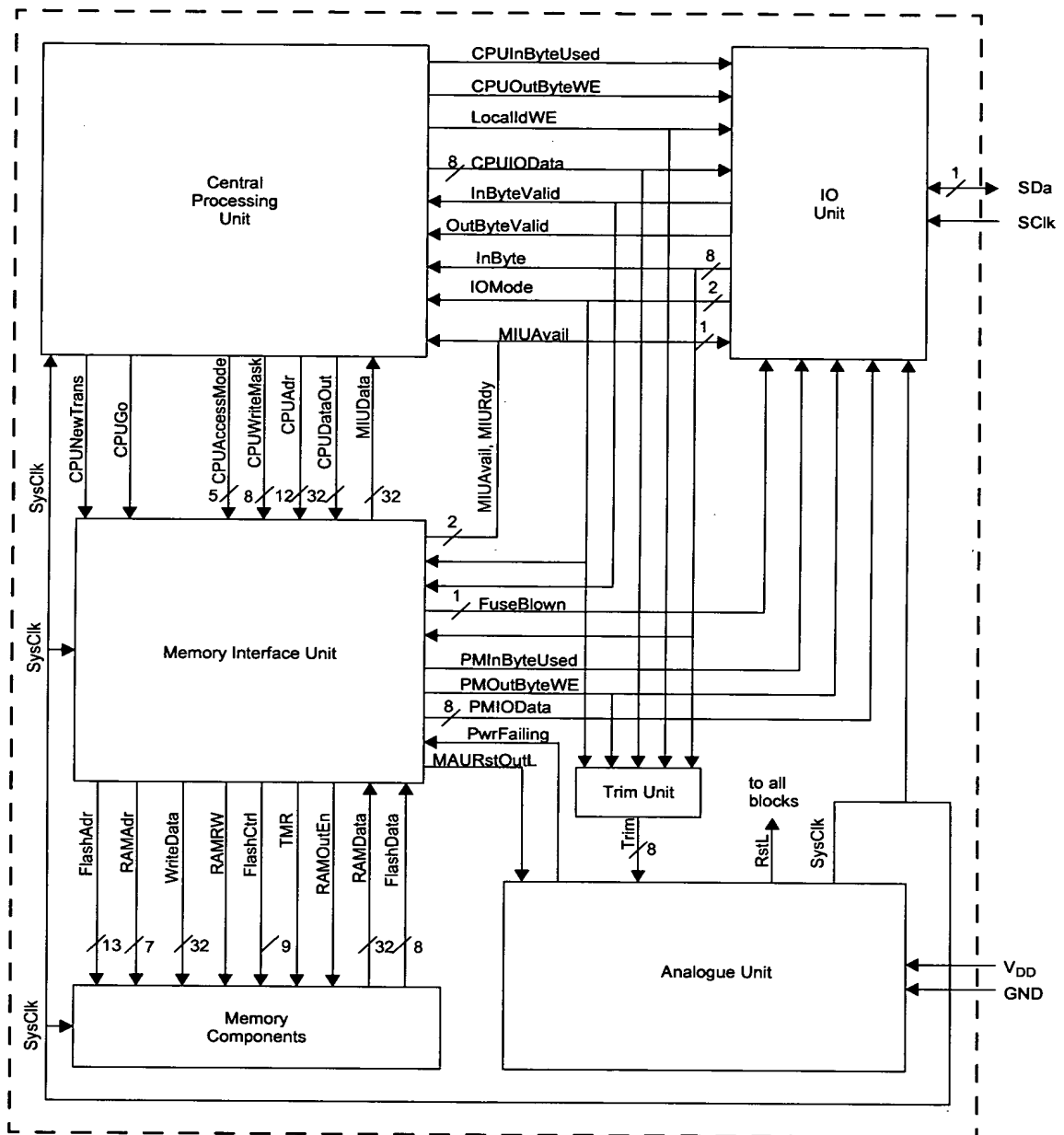


FIG. 389

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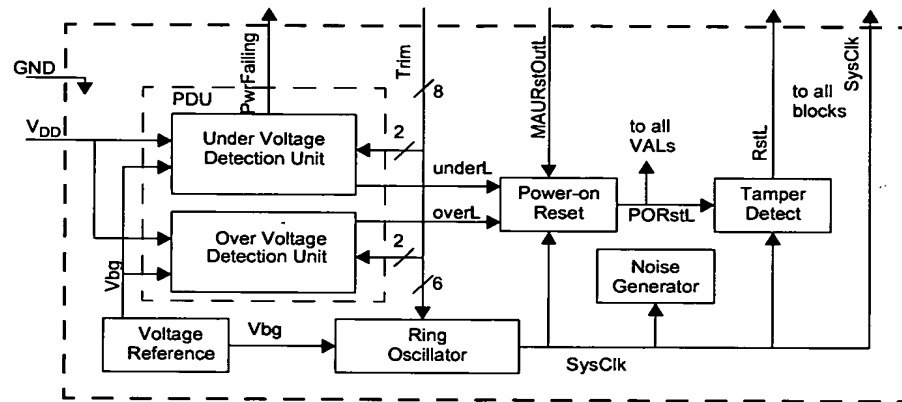


FIG. 390

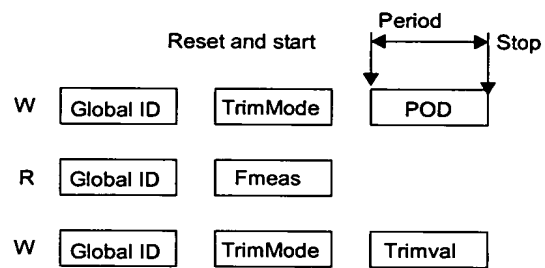


FIG. 391

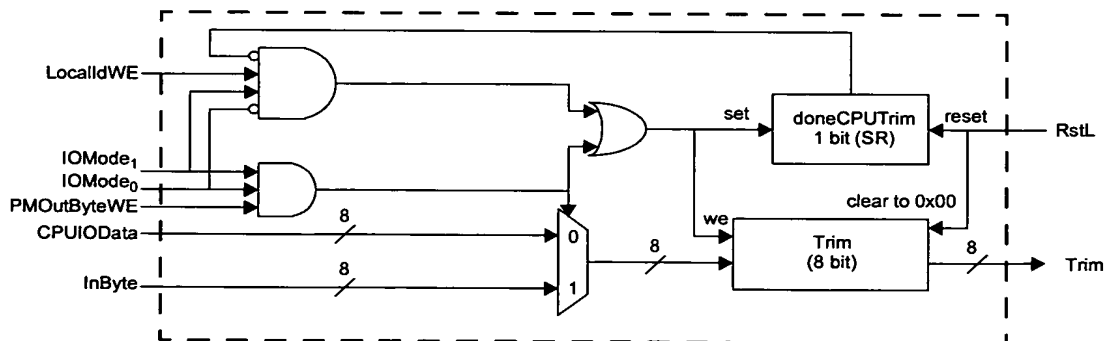


FIG. 392

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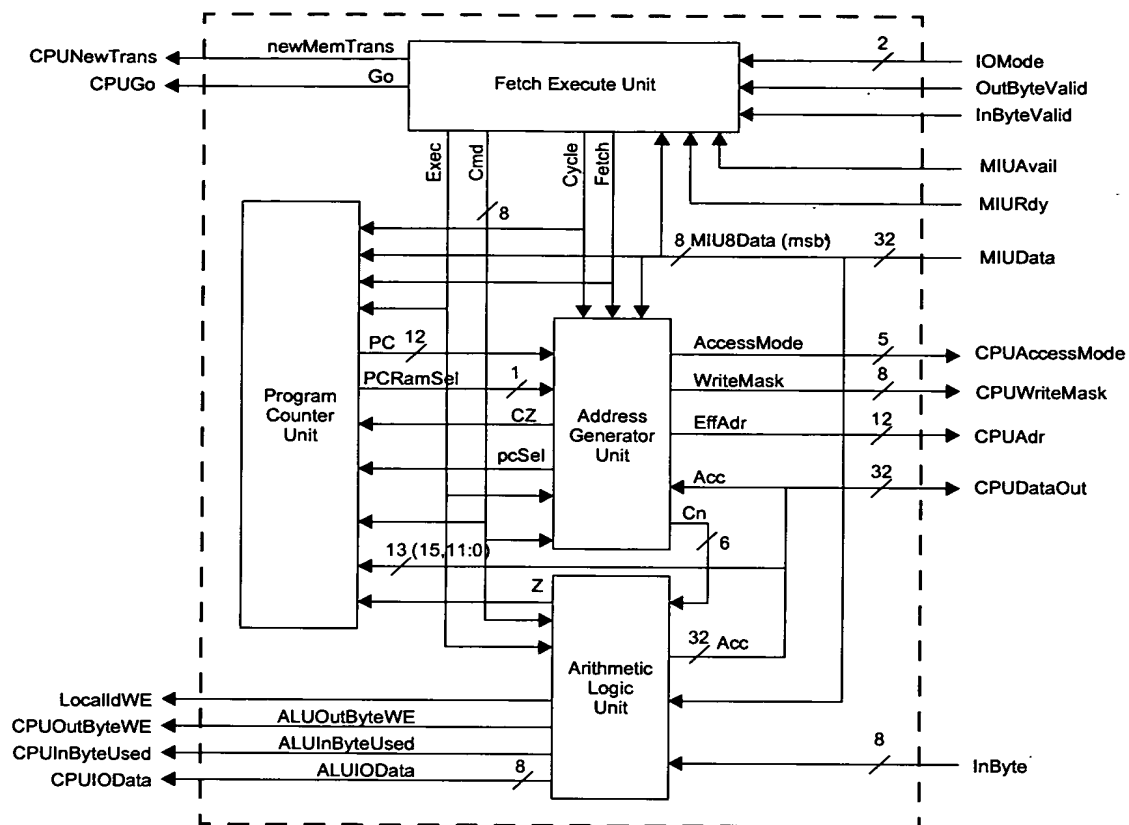


FIG. 393

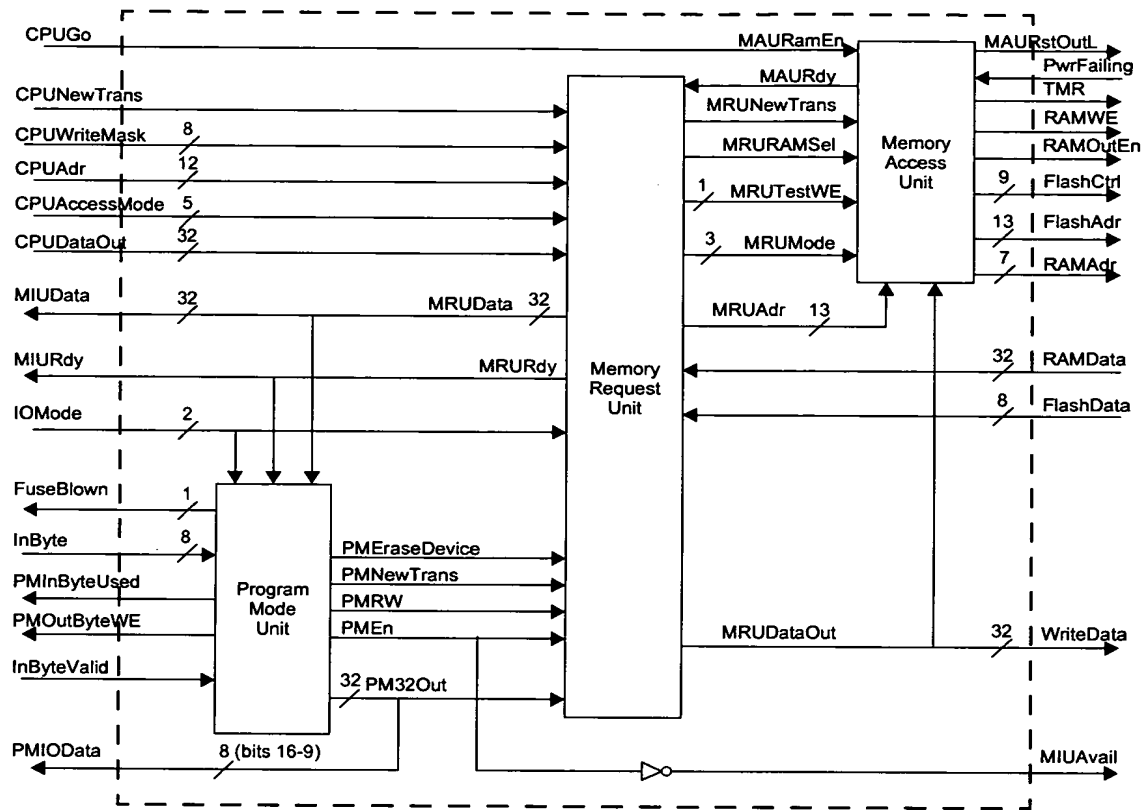


FIG. 394

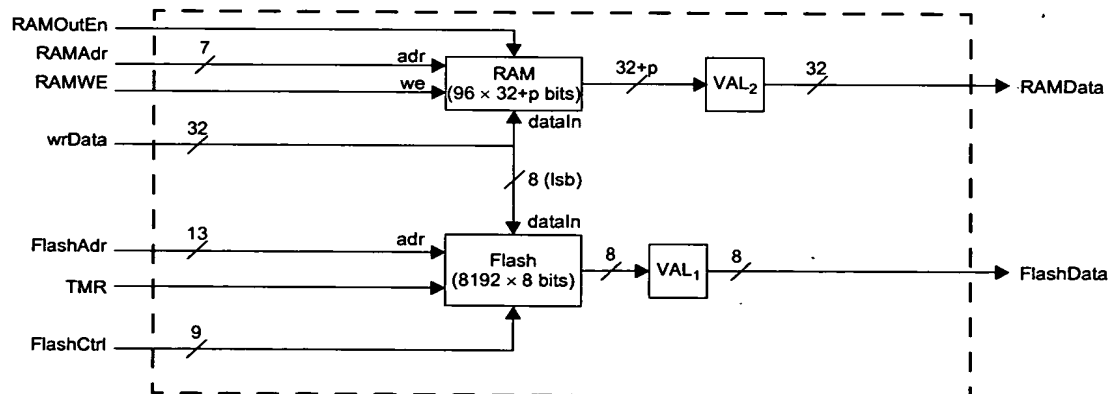


FIG. 395

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Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
PrID6	PrID5	PrID4	PrID3	PrID2	PrID1	PrID0	R/*W 0 = write 1 = read

FIG. 396

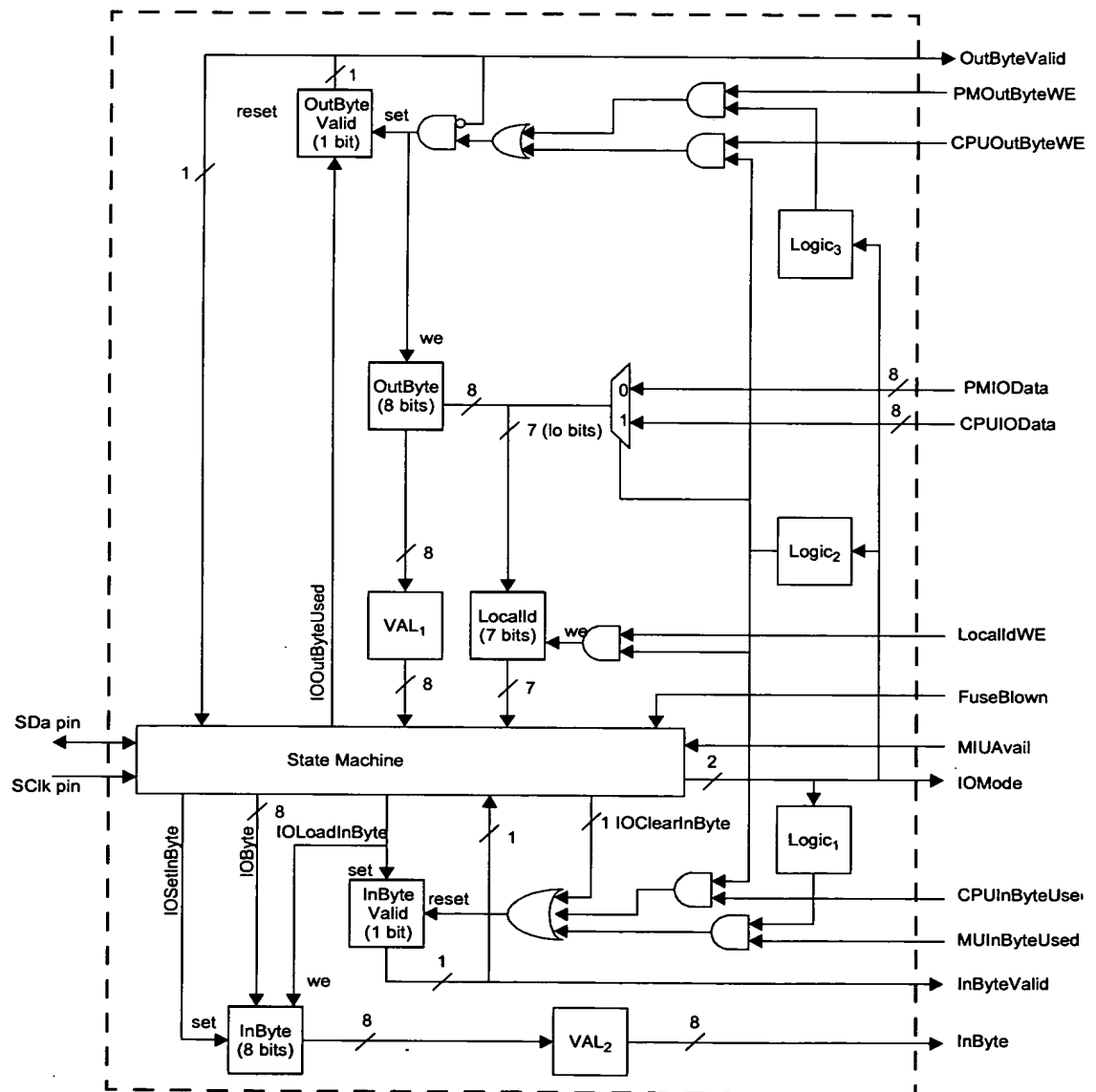


FIG. 397



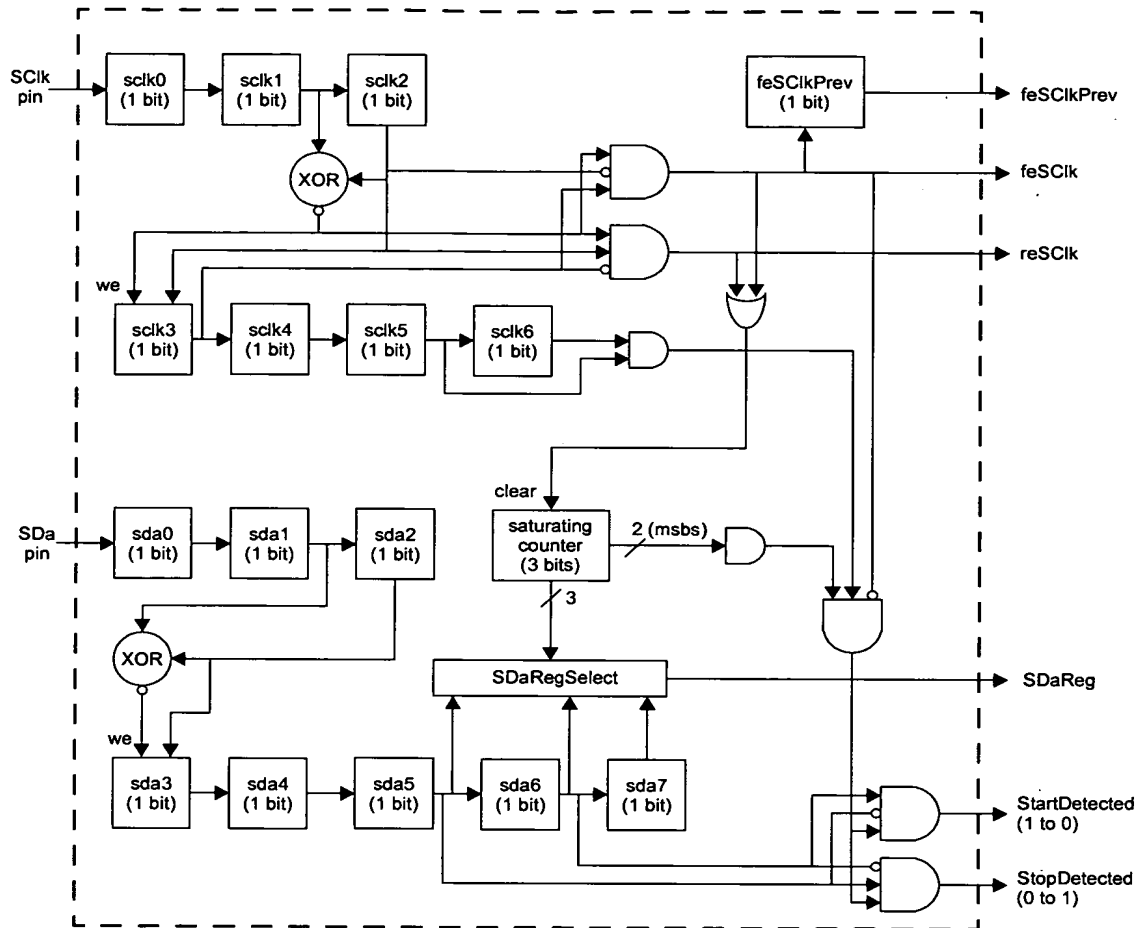


FIG. 398

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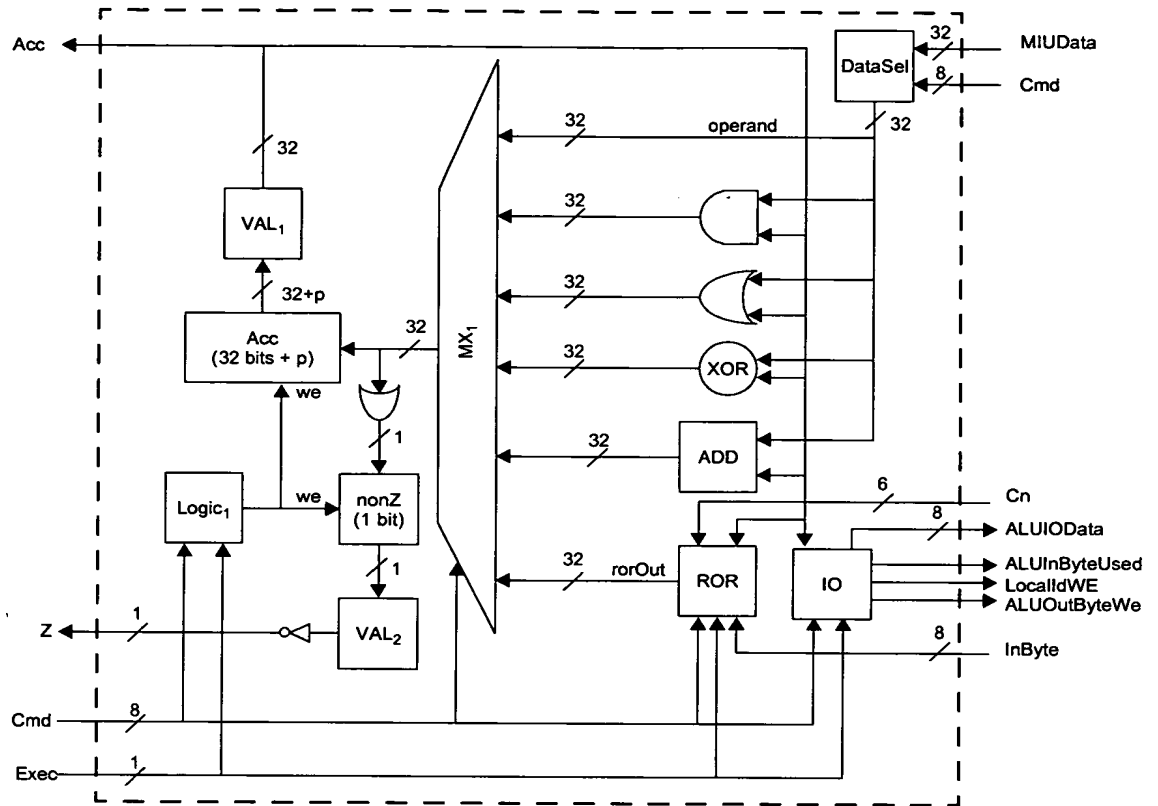


FIG. 399

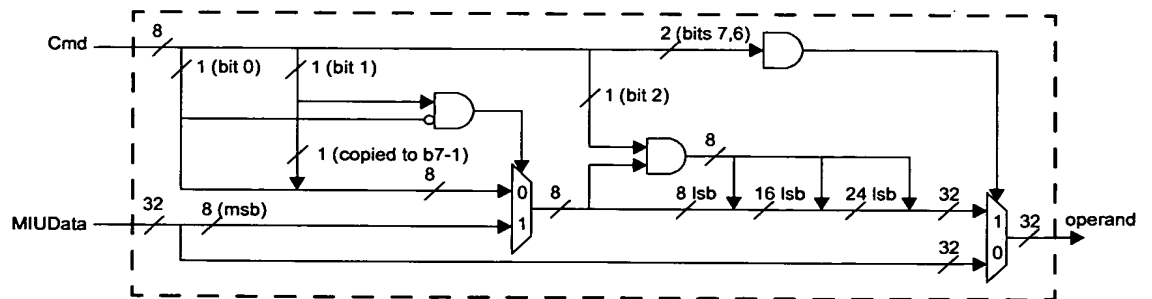


FIG. 400

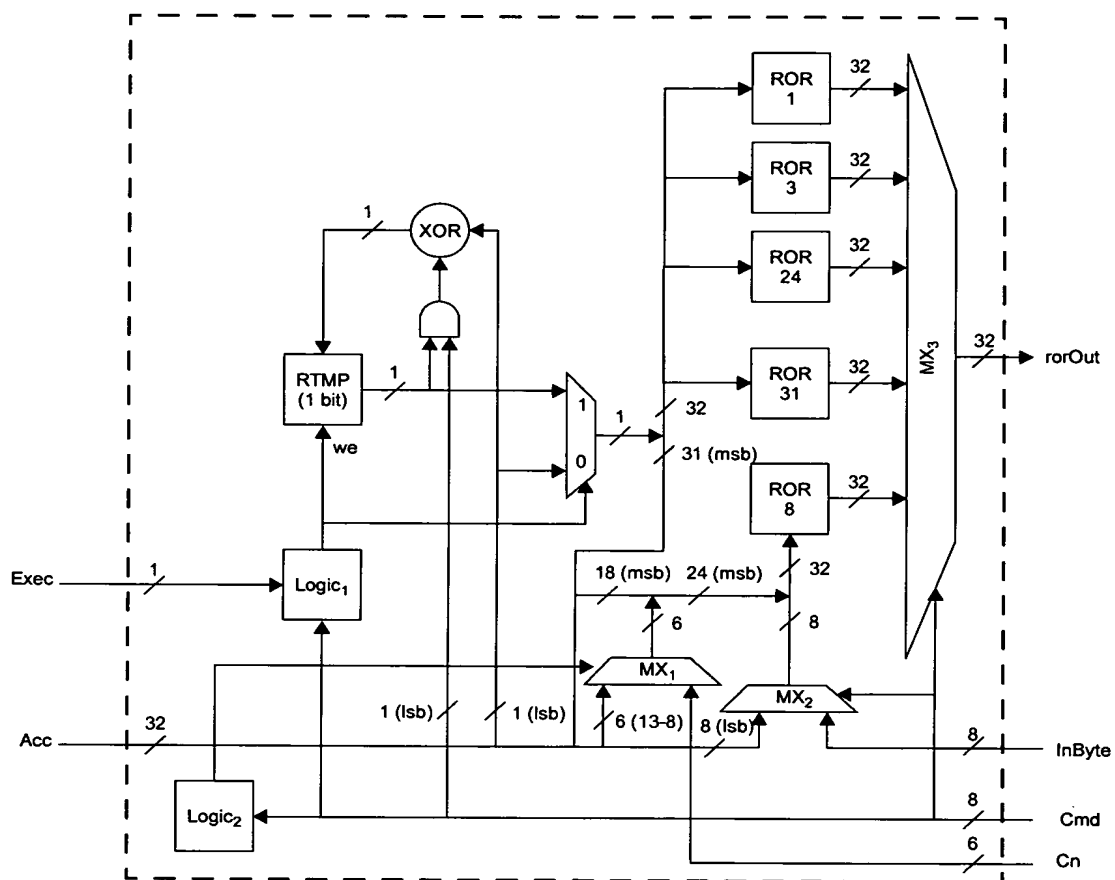


FIG. 401

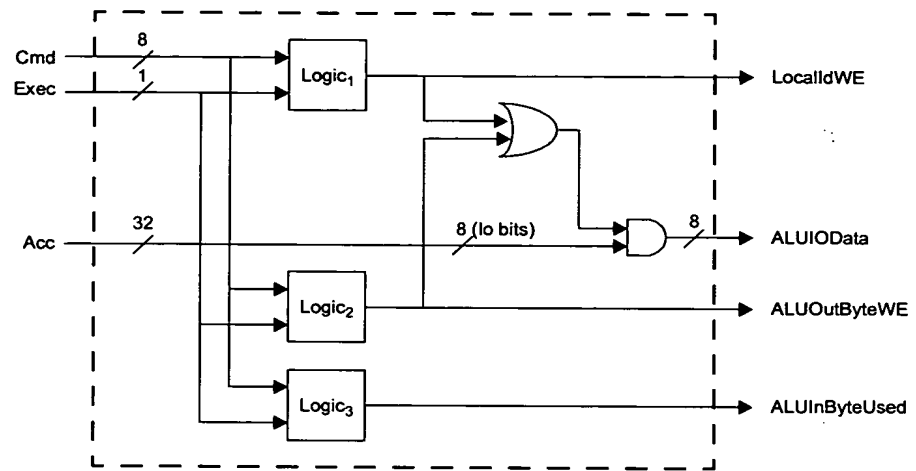


FIG. 402

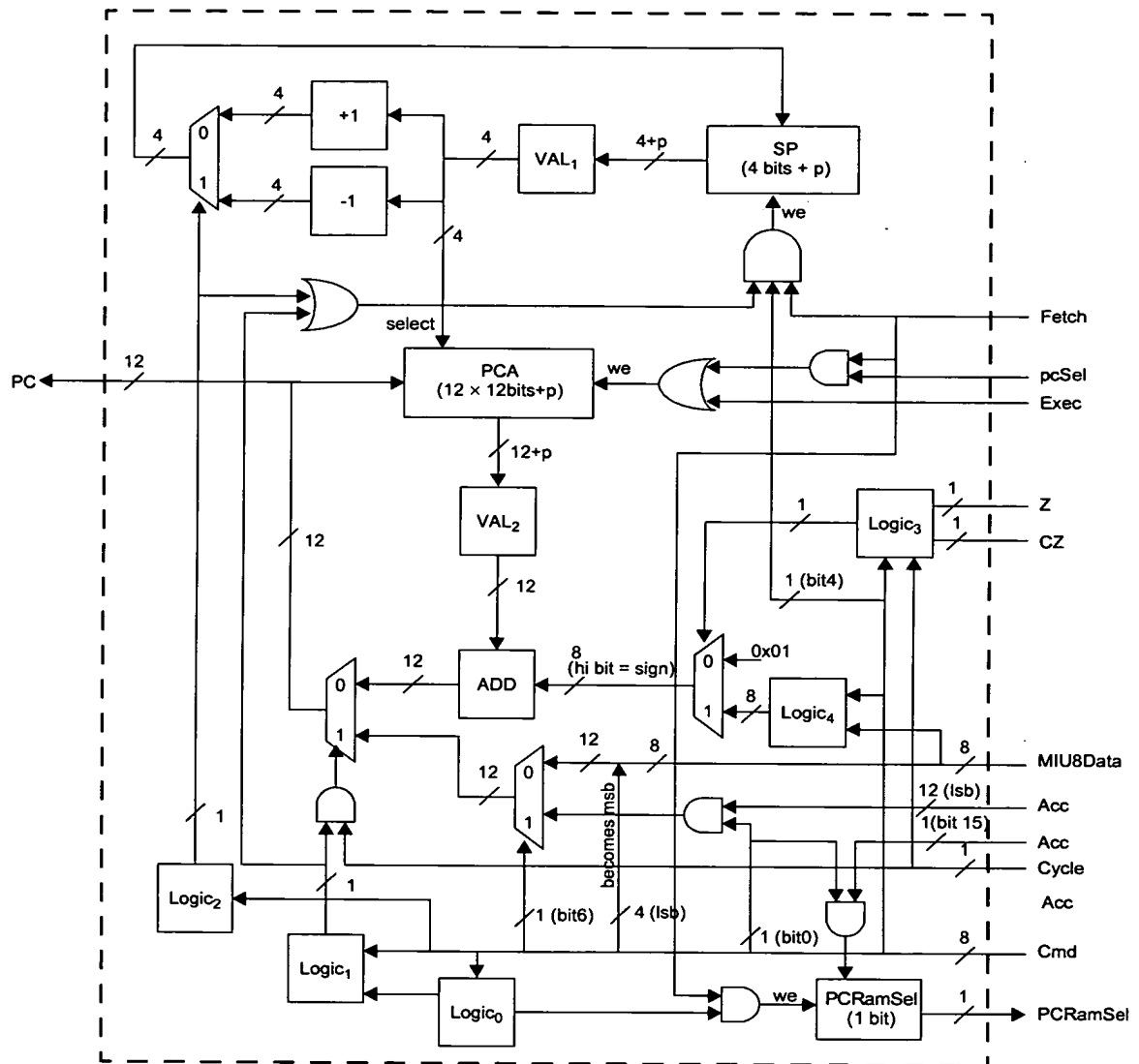


FIG. 403

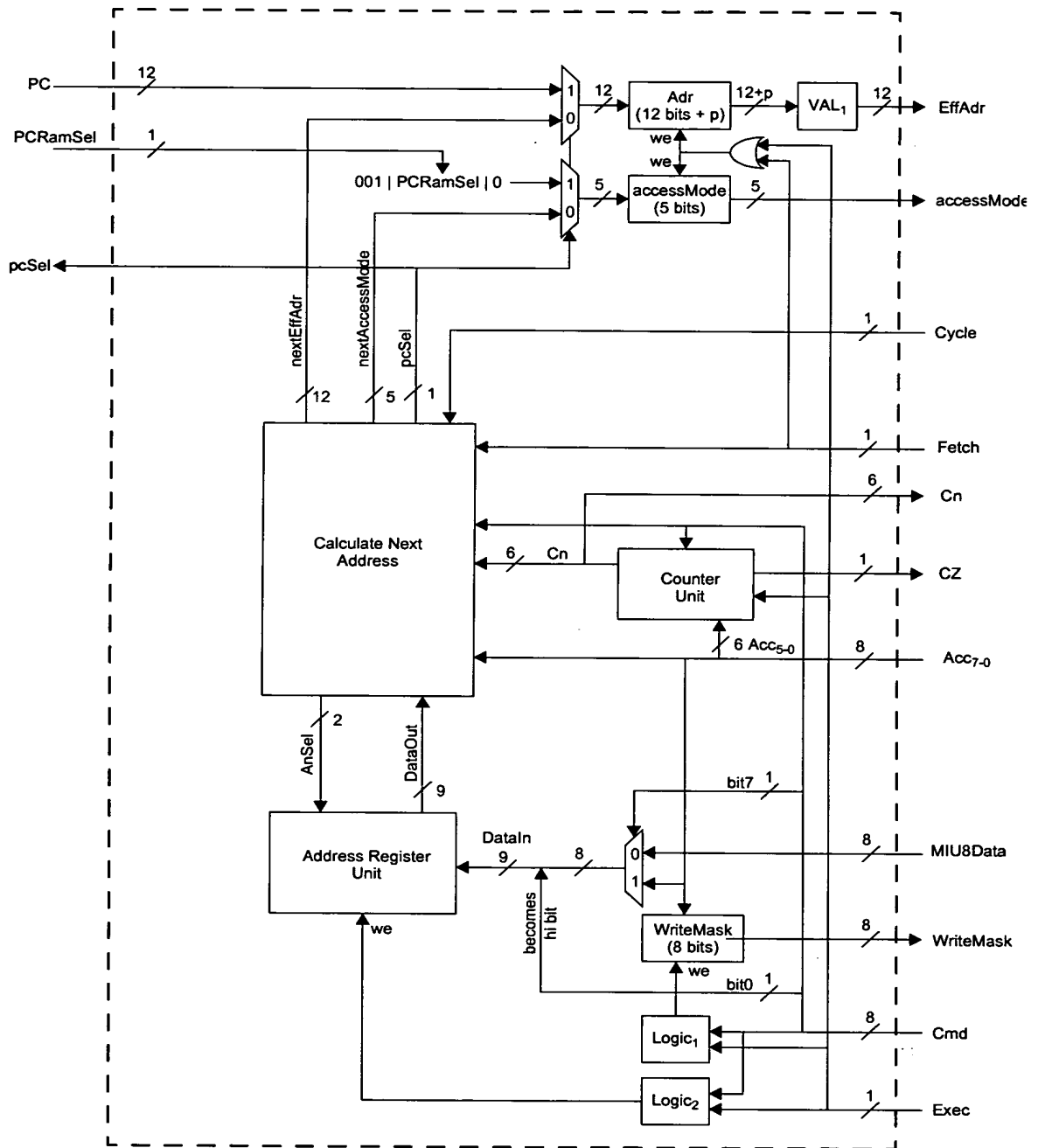


FIG. 404

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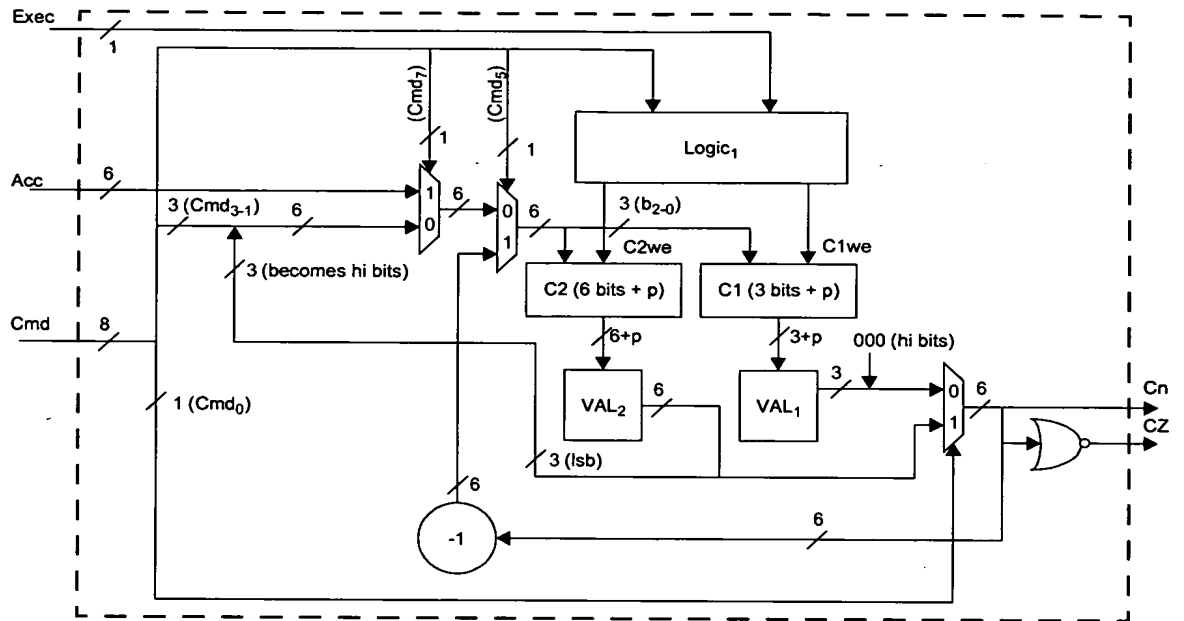


FIG. 405

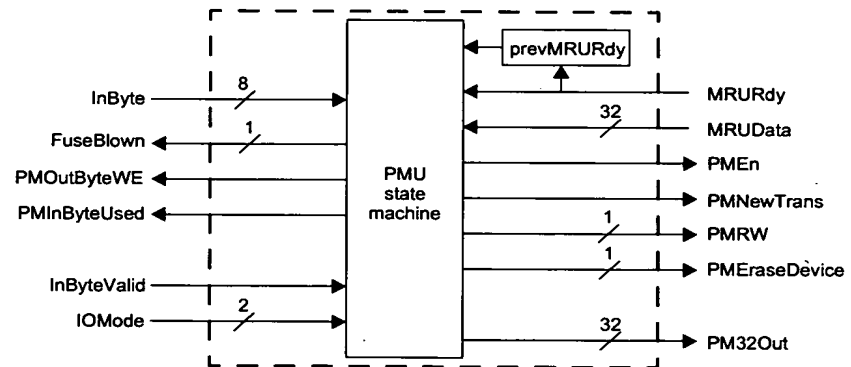


FIG. 406

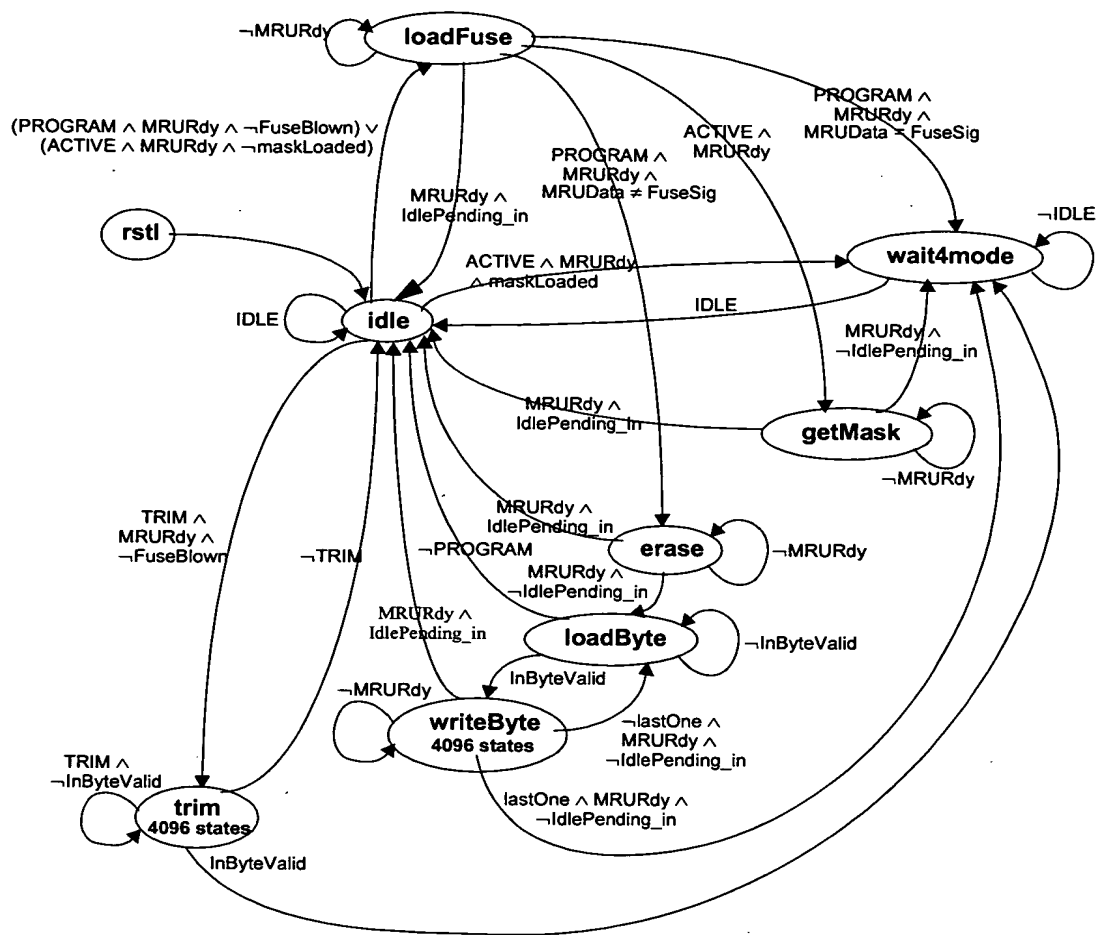


FIG. 407



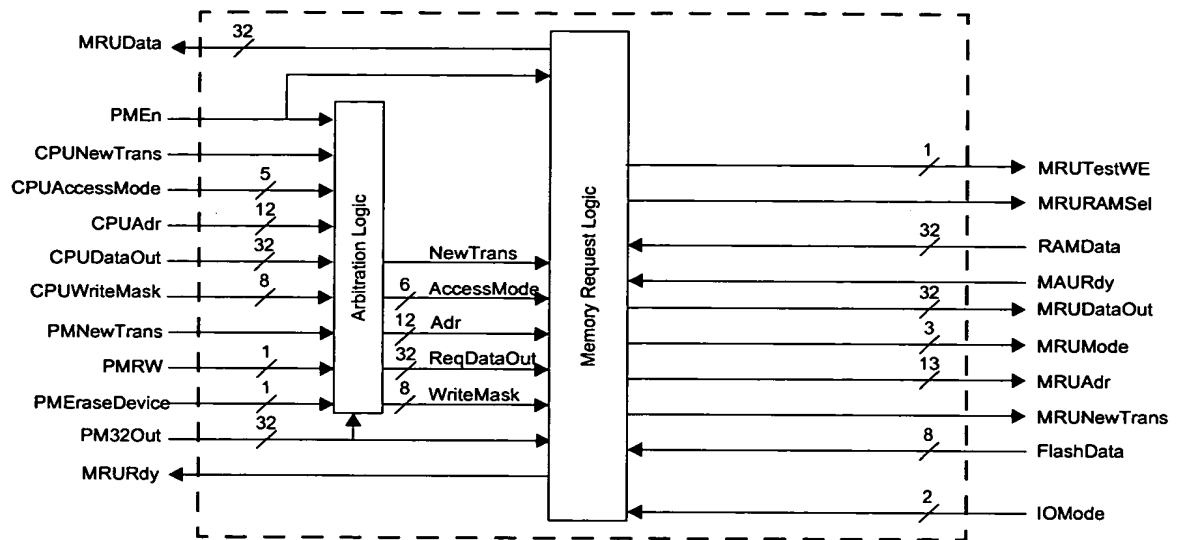


FIG. 408

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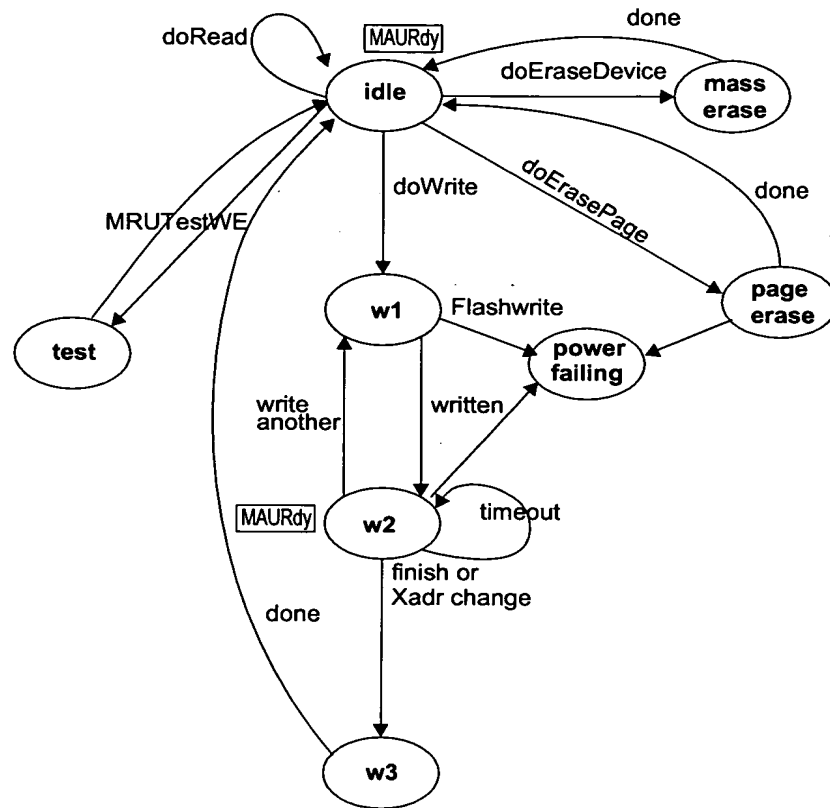


FIG. 409

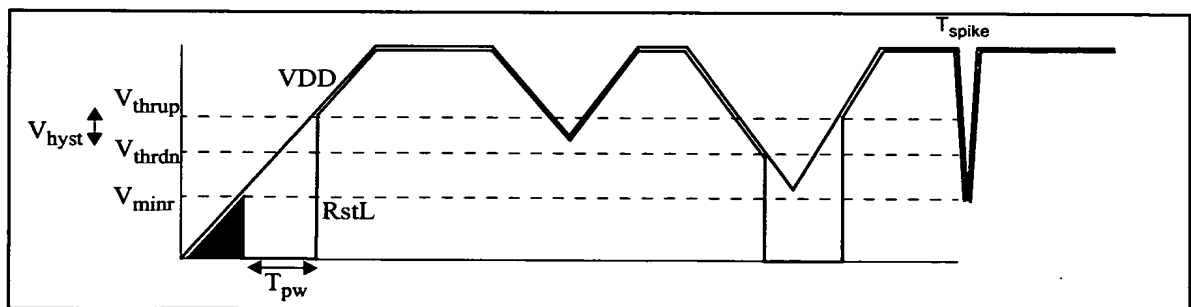


FIG. 410

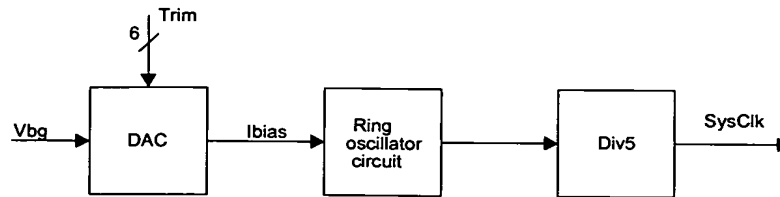


FIG. 411

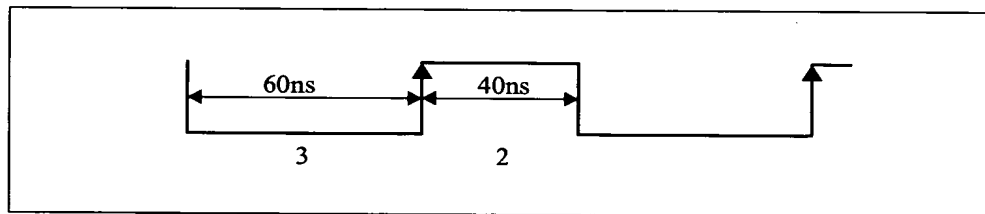


FIG. 412

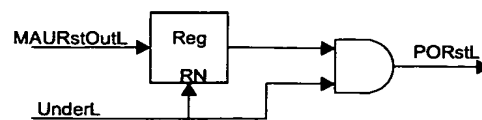


FIG. 413